NATIONAL COMMISSION ON AGRICULTURE
1976

RAINFALL AND CROPPING PATTERNS

Volume XIII

RAJASTHAN

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND IRRIGATION
NEW DELHI

RAINFALL AND CROPPING PATTERNS—STATE SERIES

VOLUME NO.	*STATE*
I	ANDHRA PRADESH
II	ASSAM
III	BIHAR
IV	GUJARAT
V	HARYANA
VI	HIMACHAL PRADESH
VII	JAMMU & KASHMIR
VIII	KERALA
IX	MADHYA PRADESH
X	MAHARASHTRA
XI	ORISSA
XII	PUNJAB
XIII	RAJASTHAN
XIV	TAMIL NADU
XV	UTTAR PRADESH
XVI	WEST BENGAL

सत्यमेव जयते

NATIONAL COMMISSION ON AGRICULTURE
1976

RAINFALL AND CROPPING PATTERNS

Volume XIII

RAJASTHAN

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND IRRIGATION
NEW DELHI

CONTENTS

SECTION PAGE

1 INTRODUCTION 1

2 METHODOLOGY 1
- Rainfall Patterns 1
- Boundaries of Rainfall Zones 2
- Cropping Patterns 3
- Relative Yield Index of Crops 3
- Livestock Patterns 3
- Soils 4
- Other Data 4
- Presentation of Information 4

3 GENERAL FEATURES 4
- Elevation 5
- Population 5
- Land Use 6
- Soils 7
- Irrigation 7
- Rainfall 7
- Potential Evapotranspiration (PE) 9
- Climatic Classification 9

4 RAINFALL ZONES TOGETHER WITH THEIR CROPPING AND LIVESTOCK PATTERNS . 10
- Rainfall Zone I 10
- Rainfall Zone II 11
- Rainfall Zone III 11
- Rainfall Zone IV 13
- Rainfall Zone V 14
- Rainfall Zone VI 15
- Rainfall Zone VII . . . .
- Rainfall Zone VIII 17
- Rainfall Zone IX 19
- Rainfall Zone X 19
- Rainfall Zone Special 20

5 OBSERVATIONS FOR FUTURE CROPPING PATTERNS 21
- General 21
- Some Observations pertaining to Rajasthan 21

APPENDIX PAGE

1 Talukwise Land Use (1969-70) and Population Statistics—Rajasthan 23
2 Talukwise Livestock Statistics—1966—Rajasthan 33
3 Rainfall and Cropping Patterns—Rajasthan 45
4 Area Under Principal Crops—1969-70—Rajasthan 52
5 Map—Rainfall Patterns —Rajasthan 63
6 Map—Cropping Patterns—Rajasthan 65
7 Map—Livestock Patterns—Rajasthan 67

सत्यमेव जयते

RAINFALL AND CROPPING PATTERNS

RAJASTHAN

INTRODUCTION

1.1 The human population of the country is estimated to rise from the 1971 Census figure of 548 million to 935 million in 2000 AD. This rise calls for increased production. Land resources being limited emphasis has to be placed on increasing productivity per unit area. Temperature and other climatic conditions being favourable for crop production throughout the year over most parts of the country, it is possible to grow more than one crop in a year provided water, the most important input, is available. In some parts of the country, the rainy season is long enough to provide scope for double cropping. This potential is yet to be fully exploited. There is scope for increasing irrigation resources in the country, but our estimates show that the area under irrigation is not expected to be more than 42 per cent of the total cropped area even in 2000 AD as against 22 per cent in 1970-71. Therefore, judicious utilisation of direct rainfall and irrigation water, singly and in combination, will have to be thought of for increasing production.

1.2 Farming technology has so advanced that it is possible to increase crop yields even under rainfed conditions, but the choice of crops would have to depend upon the amount and distribution of the prevailing rainfall. Additionally, it will be necessary that the maximum possible quantity of rain water is conserved in ponds and pools situated either within the farm area or elsewhere, in soil profiles and underground storages so that the same could be readily used to save crops in times of water stress. Not only in rainfed farming but even under irrigated conditions, one will have to plan for the most economic and efficient use of water so as to derive maximum possible benefit from rainfall and reduce dependence on irrigation. This necessitates a close study of the existing cropping patterns *vis-a-vis* rainfall patterns aimed at determining the nature of changes needed in the former. The cropping patterns depend primarily on the soil and climatic factors but the evolution of a cropping pattern in course of time is the combined effect of soil, climate, food habits and requirements and economic factors. In the context of increasing production, it is necessary to examine the cropping patterns from a scientific angle and find out possible alternative patterns having higher potential. Accordingly, the Commission undertook a comprehensive study of the rainfall and cropping patterns of the country using taluk or tehsil as unit of area. It covered several other relevant factors such as orography, land use data, human and livestock populations, soil and climate, the object being to make, as far as possible, an integrated assessment.

1.3 Chapter 14 on Rainfall and Cropping Patterns of the Commission's Report presents a consolidated account of the data collected together with analysis of their inter-relationships on all-India basis. In this analysis the Commission has been greatly benefited by the discussions with the concerned officers of State Governments. It was realised that by condensing the vast amount of informaton collected from each State into the small space of a chapter, many important and peculiar features of individual States were likely to be missed and hence the data and analysis of each State have been presented in separate volumes. The manner of presentation is similar to Chapter 14. It has also been considered desirable to include in each State volume the methodology and suggestions for future cropping patterns, which are practically the same as given in Chapter 14.

2 METHODOLOGY

2.1 The chief features of the study are (a) use of taluk or tehsil as unit of area for all basic data and analysis; (b) introduction of coded numerical forms to express patterns of distribution of monthly rainfall throughout the year, crops and livestock; (c) inclusion of information on orography, temperture, evapotranspiration, rainfall, soil, irrigation, land use, human and livestock populations and yield performance of crops, all of which influence in different ways and degrees the cropping patterns of a place and (d) presentation of coded information on rainfall, crops and livestock on 1 : 1 million scale maps.

Rainfall Patterns

2.2 A major feature of Indian rainfall is that the southwest monsoon season (June to September) accounts for 70 to 95 per cent of the annual rainfall throughout the country except in the south east peninsula and Kashmir and adjoining hill areas. The monsoon as well as the annual rainfall show large fluctuations from year to year but, as stated in Chapter 13 on Climate and Agriculture, there is no significant evidence of any trend or periodicity in either of them. Considered in relation to crop production, the total annual or seasonal rainfall does not have much significance and what is important is its distribution during the period of growth of different crops. A relevant question, therefore, is whether rainfall should be examined on a weekly, fortnightly or monthly basis. The coefficient of variation (CV) of monthly rainfall is as high as 40-50 per cent even in the rainiest month of July over most of the central, northern and eastern India. In the south, excluding the west coast, CV is higher and varies from 60 to 100 per cent. The variability of weekly or fortnightly rainfall being still greater, makes the use of either of them undependable as indicators of rainfall distribution. For a macro-study like the present, monthly rainfall data which are more dependable and also the most convenient to handle have been used.

2.3 In order to relate crop production with rainfall, certain norms have to be assumed depending on the duration of the crops and their water requirements. On the basis of available information and the fact that most crops mature in about 90 days, the following broad norms have been drawn up :—

(i) Rainfall greater than 30 cm per month (cm pm) for at least three consecutive months would be suitable for a crop like paddy whose water need is very high.

(ii) 20-30 cm pm for not less than three consecutive months would be suitable or crops whose water need is high but less than that of paddy, for example, maize and black gram.

(iii) 10-20 cm pm for at least three consecutive months would be suitable for crops requiring much less water, e.g., bajra and small millets.

(iv) 5-10 cm pm or three consecutive months would be just sufficient for crops which have low water requirements, e.g., *moth* (*P. aconitifolius*) and ephermeral grasses.

(v) Rainfall less than 5 cm pm for three consecutive months is not of much significance for crop production.

सत्यमेव जयते

2.4 For denoting the year's rainfall distribution using monthly totals, a convenient code in letter symbols with numerical subscripts explained below, has been evolved. The letters A to E in Table 1 indicate the ranges of monthly rainfall and the subscripts to these refer to the number of months having these ranges of rainfall e.g. A_2 indicates two months with rainfall greater than 30 cm pm. The ranges correspond to hose stated in the preceding paragraph.

TABLE 1

Code for Rainfall Data

Symbol	Monthly rainfall cm pm
A+	Greater than 30
B	20—30
C	10—20
D*	5—10
E*	Less than 5

+An examination of monthly rainfall in the country shows that except for areas in the west coast and some hill stations in extreme north-east, normal monthly rainfall seldom exceeds 40 cm.

*In distributions containing ranges of rainfall covered by A or B termed briefly as A & B types amounts less than 10 cm are not so significant and their frequency is generally small. To reduce the number of combinations, D is omitted in A or B type distributions; instead E is used to denote less than 10 cm pm. Thus B_2E_2 would denote two months of 20-30 cm pm and two months less than 10 cm pm rainfall.

The southwest monsoon months of June to September being the principal rainy season dominate the rainfall distributions of the country. To indicate the season's importance, monthly rainfall distribution during June to September is shown in brackets in the annual pattern. To the right of the bracket is the distribution for the post-monsoon months, namely, October to January and to the left that for the pre-monsoon months namely, February to May. In order to explain how such a coded rainfall distribution written in symbols with numerical subscripts has to be interpreted, a hypothetical example may be considered. D_1 E_3 (A_2 B_1 C_1) C_1 D_3, in which for each of the three periods, the symbols are in order of decreasing rainfall which is not necessarily the calendar sequence, can be explained as under :

(i) D_1 E_3 represents the period February to May in which one month's rainfall (usually May) is in the range of 5-10 cm and the remaining three months get less than 5 cm pm.

(ii) A_2 B_1 C_1 represents the period June to September, in which two months (usually July and August) get more than 30 cm pm rainfall, one month (September) gets 20-30 cm and the remaining month, ie., June gets 10-20 cm.

(iii) C_1 D_3 represents the period October to January in which October gets 10-20 cm rainfall and the rest 5-10 cm pm.

Boundaries of Rainfall Zones

2.5 Since differences in monthly, seasonal and annual rainfall are not large within short distances linear interpolation of rainfall data is permissible. Rainfall data being point measurements, isolines for the same or nearly the same type of distribution of monthly rainfall can, therefore, be drawn. These isolines may not necessarily follow the boundaries of taluks which are taken to be unit of area in this study and hence for delineation of boundaries the following procedure has been adopted :—

- (i) Where variations are small, isolines follow the taluk boundaries;
- (ii) where variations are large, isolines delineate the zone boundaries; and
- (iii) any taluk, more than three quarters of which lies ouside of a zone is not considered a part of that zone.

2.6 If an identical distribution is observed over two or more adjacent taluks a pattern is said to have evolved and the area covered by it is distinguished as a zone and indicated suitably by a Roman numeral. Rainfall patterns have been identified for the whole country using the methodology described above. The data used for the analysis are the monthly normals of rainfall (1901 to 1950)[1] and the patterns and zones are depicted on all-India map which forms part of Chapter 14 on Rainfall and Cropping Patterns of the Commission's Report.

Cropping Patterns

2.7 The basic data for the study of cropping patterns of the country are the areas under different crops in each of the taluks. A large number of crops are grown in a taluk but most of them occupy small areas, often less than one per cent of the total cropped areas of the taluk. With a view to limiting the number of crops constituting a pattern only those crops are considered which individually occupy 10 per cent or more of the gross cropped area of the taluk. In this process, several crops have to be excluded, even though they may be otherwise important. The minimum limit has been fixed at 70 per cent, so that the number of crops, which together cover at least 70 per cent of the gross cropped area, and in which none occupies less than 10 per cent, is not large. Trial computations have shown that in such distributions any crop occupying more than 10 per cent area is rarely omitted and the number of crops hardly exceeds five. When the same distribution holds good for two or more adjacent taluks, a pattern is obtained.

2.8 As in the case of rainfall, percentage area coverage by crops is expressed by means of numerical subscripts affixed to crop symbols shown in Table 2. The list of crops given below is comprehensive and will hold good for all the States.

TABLE 2

Crop Symbols and Area Intervals

Crop	Symbol
1 rice	Pd
2 wheat	W
3 jowar (kharif)	Jk
4 jowar (rabi)	Jr
5 bajra	B
6 maize	M
7 ragi	R
8 small millets	Mt
9 barley	Ba
10 oats	Oa
11 gram	G
12 pigeonpea (tur)	T
13 pulses other than pigeonpea and gram	Pu
14 groundnut	Gn
15 oilseeds other than groundnut	O
16 cotton	C
17 jute	Ju
18 other fibres	Fb
19 sugarcane	S
20 potato	Pt
21 vegetables	V
22 fruits	Fr
23 tapioca	Ta
24 plantations	L
25 fodder	F
26 chillies	Ch
27 tobacco	To

Area interval (per cent)	*Subscript*
70 or more	1
50-70	2
30-50	3
10-30	4
less than 10	5

The crop code contains the crop symbol and the appropriate subscript. In writing crop distribution, the first crop has always the highest area but the rest may not necessarily follow the order of decreasing areas. For example, crop distribution, C_3 Jr_4 Mt_4, means that cotton area is 30-50 per cent, and jowar rabi and millets each occupies 10-30 per cent of the gross cropped area, the total being 70 per cent or more. Two or more taluks having the same distribution of crops constitute a pattern. Cropping patterns so derived have been indicated on maps of 1 : 1 million size.

Relative Yield Index of Crops

2.9 Besides the absolute figures, the yield of a crop has also been expressed as per cent of all-India average which is called Relative Yield Index (RYI). Relative Yield Index values have been computed for the principal crops on the basis of (1968-69) to 1970-71) data available in the records of the Directorate of Economics and Statistics, Ministry of Agriculture and Irrigation.

Livestock Patterns

2.10 The livestock patterns are relevant only insofar as these are related to production of fodder and feeds. As talukwise data were not available for the livestock Census, 1972, those of 1966 Census as published by the States have been used. The animals considered for livestock analysis are shown in Table 3 together with their symbols.

---

[1] Memoirs of India Meteorological Department, Volume XXXI, Part 3, 1962.

TABLE 3

Livestock Symbols

Category	Symbol
cattle :	
male (over 3 years)	Cm
female (over 3 years)	Cf
young stock (under 3 years)	Cy
buffaloes :	
male (over 3 years)	Bm
female (over 3 years)	Bf
young stock (under 3 years)	By
sheep	S
goats	G
horses, mules and ponies	H
donkeys	D
camels	Ca
pigs	P

The livestock patterns are expressed in coded form in the same manner as the cropping patterns.

सत्यमेव जयते

Soils

2.11 Soil data on a taluk basis are not available for all the areas of the country. As such, soils have been discussed in a general manner using the traditional nomenclature in describing their characteristics.

Other Data

2.12 The sources of other data featuring in the study are given below :

Item	*source*
taluk area	States' Census Reports 1971 or from the data furnished by the States in their land-use returns.
orography	maps of the Survey of India and National Atlas Organisation.
temperature	Climatological Tables of Observatories in India, India Meteorological Department, 1931-1960 normals.
evapotranspiration	scientific Report No. 136 of the India Meteorological Department, 1971.
human population	Census of India, 1971
irrigation and land use statistics	basic data pertaining to land utilisation statistics obtained from the States and refer mostly to 1969-70.

Presentation of Information

2.13 The tables required for following the text are gven in the text itself at appropriate places, whereas the basic data are appended as follows :

APPENDIX 1	Talukwise Land Use (1969-70) and Population Statistics, (arranged according to State rainfall zones).
APPENDIX 2	Talukwise Livestock Population 1966 (arranged according to State rainfall zones).
APPENDIX 3	Zonewise Information on Rainfall, Rainy days and Cropping Patterns.
APPENDIX 4	Zonewise area under Principal Crops (per cent of Gross Cropped Area).

2.14 Rainfall, cropping and livestock patterns of each State are indicated on maps in the 1:1 million scale and given in Appendices 5, 6 and 7 respectively. In the case of rainfall patterns, the zonal numbers in State maps have been given in Roman numerals and their all-India equivalents as used in Chapter 14 of the Commisson's Report have been shown in three digit Arabic numerals within brackets.

3 GENERAL FEATURES

3.1 The State has an area of 3.4 lakh sq km and consists of 26 districts whose areas vary from 3,782 (Dungarpur) to 38,832 sq km (Jaisalmer). The frequency distribution of districts according to areas is indicated below :—

No. of districts with area in thousand sq. km

area '000 sq km	Less than 5	5—10	10—15	15—20	20—25	25—30	greater than 30
no. of districts	3	9	4	5	2	2	1

3.2 The total number of taluks in the State is 196. Their number varies from 2 in Jaisalmer, the largest district in the State, to 17 in Udaipur. The areas of individual taluks range from less than 500 to over 5,000 sq. km. The frequency distribution of taluks in the various districts of the State, areawise are given in Table 4.

TABLE 4

Frequency Distribution of taluks in Various Districts

District	No. of taluks with area in sq. km. of						
	500	501—1000	1001—2000	2001—3000	3001—5000	5000	Total
Udaipur	—	10	6	1	—	—	17
Ajmer	—	—	4	1	—	—	5
Jalore	—	—	1	1	2	—	4
Nagaur	—	—	4	3	1	—	8
Ganganagar	—	6	3	—	3	—	12
Tonk	—	2	4	—	—	—	6
Sirohi	—	2	3	—	—	—	5
Churu	—	—	3	2	2	—	7
Bharatpur	3	9	—	—	—	—	12
Sawai Madhopur	1	6	4	—	—	—	11
Jhalawar	—	3	3	—	—	—	6
Jaipur	—	9	6	—	—	—	15
Barmer	—	—	—	1	2	2	5
Sikar	—	—	6	—	—	—	6
Pali	—	—	5	1	1	—	7
Jhunjhunu	—	—	4	—	—	—	4
Kota	—	7	5	—	—	—	12
Jaisalmer	—	—	—	—	—	2	2
Jodhpur	—	—	—	—	4	1	5
Bikaner	—	—	—	—	1	3	4
Dungarpur	—	1	2	—	—	—	3
Chittaurgarh	3	6	—	2	—	—	11
Alwar	—	7	2	—	—	—	9
Bhilwara	—	6	5	—	—	—	11
Bundi	—	—	4	—	—	—	4
Banswara	—	2	3	—	—	—	5
Total	7	76	77	12	16	8	196

सत्यमेव जयते

Elevation

3.3 The principal feature of the State is that it is not an area of high elevations, the highest being 1,000 -1,200 masl in some of the taluks of the southern and western districts of Udaipur, Pali, Sirohi, Jalore and Barmer. In Ganganagar, Churu, Bikaner, Jodhpur and Jaisalmer, the maximum elevation is 400 masl. In the eastern and southern districts, the maximum elevation is 500 masl as against a maximum of 800 masl in the rest of the State. The minimum elevation varies generally from 100 masl in the west to 300 masl in the rest of the area excepting in Ajmer and Bhilwara, where it is 400 to 450 masl. Sanchora in Jalore district has the lowest elevation in the State at only 17 m, rising to a maximum of 175 masl.

Population

3.4 The population of the State is 25.8 million. This corresponds to an average population density of 75 which is less than half of the all-India level. The western districts have very low density. Jaisalmer, the biggest district, has only 6 persons per sq km whereas the adjacent district of Bikaner and Barmer have less than 30. The north-eastern districts of Alwar, Bharatpur and Jaipur have the highest populaton density of about 180 followed by Ajmer, Sikar and Dungarpur with a density of 140. The south eastern districts (Kota, Jhalawar, Bundi and Tonk have a population density ranging between 100-150. About 12 per cent of the taluks, have population density of less than 50. 40 per cent lie in the range of 51-100 and the remaining have more than 100 persons per sq. km. Table 5 gives the frequency distribution of taluks according to population ranges.

TABLE 5

Frequency Distribution of Taluks according to Population Ranges

District	Persons per sq km	Number of taluks in population density range						Total No. of taluks
		0-50	51—100	101-150	151—200	201—300	301-500	
Udaipur	104	1	4	11	1			17
Ajmer	138		3		1	1		5
Jalore	63	1	3					4
Nagpur	72		8					8
Ganganagar	68	3	4	4		1		12
Tonk	87		5	1				6
Sirohi	82		5					5
Churu	52	3	4					7
Bharatpur	184		1	2	3	6		12
Sawai Madhopur	113		3	4	2	2		11
Jhalawar	100		4	2				6
Jaipur	177		2	5	6	1	1	15
Barmer	28	5						5
Sikar	135		4	2				6
Pali	79		6	1				7
Jhunjhunu	157			1	3			4
Kota	91	2	7	2	1			12
Jaisalmer	4	2						2
Jodhpur	51	3	1	1				5
Bikaner	21	4						4
Dungarpur	140			3				3
Chittaurgarh	91		4	7				11
Alwar	181			3	3	3		9
Bhilwara	101		7	3	1			11
Bundi	80		4					4
Banswara	129			3	2			5
State	76	24	79	55	23	14	1	196

Land Use

3.5 Forest in the State are negligible except in some of the southern and eastern districts of Udaipur, Dungarpur, Banswara, Sawai Madhopur, Sirohi and Kota, which have 15 to 20 per cent area under forests. For the State as a whole, forests account for 3.9 per cent of the area and land used for non-agricultural purposes 3.4 per cent. Barren and unculturable land occupies 13.8 per cent followed by permanent pastures (5.4 per cent) and culturable waste (18.4 per cent). Fallow lands are considerable in the western districts--Barmer, (52 per cent). Jodhpur and Jalore (36-38 per cent) and Pali (31 per cent)—but the State average is only 14 per cent. The net sown area covers 41 per cent of the State area. The districtwise land use statistics is given in Table 6.

TABLE 6

Districtwise Land Use Statistics

(Per cent of reporting area)

District	Forest	Land put to non-agri. uses	Barren & unculturable land	Total of cols. 3 and 4	Permanent pasture & other grazing lands	Land put to misc. trees crops & groves not included in net area sown	Culturable waste	Total of cols. 6,7 and 8	Other fallow land	Current fallows	Total of cols 10 & 11	Net area sown
1	2	3	4	5	6	7	8	9	10	11	12	13
Banswara	16·2	1·2	18·2	19·3	7·2	—	3·8	11·0			13·8	39·7
Jalore	0·6	3·2	9·0	12·2	5·0	—	1·8	6.7	16·4	19·5	35·8	44·7
Bhilwara	1·8	3·8	15·5	19·3	10·7	—	28·7	39·5	7·1	3·4	10·5	28·8
Churu	0·1	4·3	0·1	4·4	2·7	—	5·1	7·8	9·6	8·7	18·3	69·5

TABLE 6 (*Contd.*)

1	2	3	4	5	6	7	8	9	10	11	12	13
Sawai Madhopur	17·1	3·0	16·1	19·1	8·1	—	6·0	14·1	1·1	1·7	2·8	46·9
Pali	5·5	3·7	12·3	16·0	7·2	—	1·0	8·2	16·1	15·1	31·2	39·1
Alwar	2·3	4·8	17·9	22·7	5·0	—	3·8	8·8			2·2	63·9
Nagpur	0·1	4·1	4·7	8·7	4·6	—	0·4	4·9			20·4	65·8
Ajmer	4.3	4·7	12·6	17·3	8·9	—	13·6	22·5	5·1	5·3	10·5	45·5
Chittaurgarh	5·6	3·3	18·8	22·1	8·2	—	27·6	35·8			3·1	33·2
Jaisalmer	0.5	1·2	42·1	43·3	2·0	—	48·0	50·0	4·7	0.8	5·5	0.7
Kota	18·2	3·5	12·3	15·9	4·7	0·1	12·2	17·0	1·4	1·3	2·7	46·3
Udaipur	14·6	2·9	30·1	33·0	9·7	—	14·5	24·2		...	10·2	18·1
Jhalawar	6·6	4·2	14·8	18·9	9·0	0·1	15·3	24·3	1·4	1·2	2·6	47·6
Ganganagar	0·2	4·6	0·2	4·8	—	—	21·2	21·2	7·8	8·8	16·6	57·2
Bundi	5·5	4·6	32·9	37·6	4·9	0·2	5·6	10·6	2·5	3.9	6·4	39·9
Bharatpur	3·8	5·1	14·6	19·7	4·8	0·2	3·1	8·1	1·4	2·2	3·6	65.0
Tonk	2·4	3·9	5·8	9·7	9·5	—	11·0	20·5	1·9	2·7	4·6	62·7
Sikar	1·3	3·0	7·8	10·8	6·2	—	2·4	8·6	2·8	6·2	9·0	70·3
Jhunhjunu	5·9	1·6	3·9	5·5	7·8	—	1·1	8·9	1·1	2·5	3·6	76·1
Jaipur	3·6	4·5	8·0	12·5	7·9	0·1	7·6	15·6	1·		10·5	57·9
Bikaner	0·3	4·4	—	4·4	7·3	—	85·9	67·2	7·2	4·9	12·1	16·1
Jodhpur	0·1	4·1	6·5	10·6	5·0	—	0·1	6·0	24·6	13·3	37·9	45·5
Barmer	0·4	1·9	5·6	7·5	7·2	—	16·6	23·8	28·1	24·2	52·3	15·9
Sirohi	9·2	3·6	32·6	36·2	6·5	—	4·5	11·0			15·1	28·5
Dungarpur	17·9	3·9	20·6	24·5	11·6	0·3	8·3	20·2	2·9	2·3	5·1	32·3
STATE	3·9	3·4	13·8	17·2	5·4	—	18·4	23·8	8·2	5·8	13·9	40·8

Soils

3.6 The State has the following seven types of soils :

(i) Desert soils

These prevail in the western districts of Jalore, Barmer, Jaisalmer, Jodhpur, Bikaner, Churu and Nagaur (western half). The area covered by desert soils is one-third of the total area of the State. A small area in the south east of Barmer has alluvial soils with saline and alkaline patches.

(ii) Grey brown soils

The districts adjoining the Sirohi, Pali, Nagaur (eastern half) and Jhunjhunu (southern half) have grey brown soils. Saline and alkaline patches are present in Nagaur area.

(iii) Mixed red and black soils

Banswara (eastern half), Chittaurgarh, three-fourths of Bhilwara (east) and adjoining southwest area of Tonk and Bundi and western area of Kota have mixed red and black soils with saline and alkaline patches.

(iv) Medium black soils

These soils occur in Kota (eastern three quarters), Jhalawar and eastern half of Sawai Madhopur.

(v) Alluvial soils

Recent alluvial soils with saline and alkaline patches are in Tonk, Jaipur, Alwar and Bharatpur.

(vi) Calcarious sirozenic soils

Parts of Jhunjhunu and southern third of Ganganagar District have calcarious sirozenic soils.

(vii) Red and yellow soils

Red and yellow soils prevail in the rest of the State, covering the districts of Dungarpur, west (half) of Banswara, most of Udaipur, Bhilwara (western one fourth) and Ajmer.

Irrigation

3.7 The net irrigated area is 2 million ha. and gross irrigated area is 2.5 million ha. (16 per cent of the gross cropped area of the State). The intensity of cropping is 120 per cent. Of the net irrigated area, 37 per cent is by canals, 53 per cent by wells and tubewells and remaining 10 per cent by tanks. Twenty six per cent of the gross irrigated area is in Ganganagar district, followed by ten per cent in Jaipur district. There are 10 districts having one lakh hectares under irrigation. In about a third of the taluks 21 to 40 per cent of the net area sown is irrigated. Rainfall Zone I, which includes Ganganagar has the largest number of taluks with irrigation exceeding 60 per cent. About 80 per cent of area under food crops is irrigated.

Rainfall

3.8 The annual rainfall of Rajasthan varies from less than 10 cm in the extreme west of Jaisalmer district to 100 cm in small areas of Chittorgarh, Jhalawar and Kota districts. West and east Rajasthan have averages of 31 and 70 cm rainfall respectively. The monthly distribution of rainfall is shown below :

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Rajasthan (East)													
Rainfall (mm)	9.0	6·0	4·7	3·2	8·5	68·3	242·8	228·5	112·0	12·2	4·3	4·6	704·1
Percent of annual rainfall	0·2	0·1	0·7	0·5	1·3	10·0	35·0	33·0	16·0	1·8	0·7	0·7	100·0
No. of rainy days	0·8	0·6	0·5	0·4	0·8	3·7	10·8	10·2	5·1	0·7	0·3	0·4	34·3
Rajasthan (West)													
Rainfall (mm)	5·4	5·9	4·0	3·1	7·7	28·6	98·5	109·9	40·4	4·3	0·8	2·5	311·1
Percent of annual rainfall	1·7	1·9	1·3	1·0	2·5	9·2	31·7	35·3	13·0	1·4	0·2	0·8	100·0
No. of rainy days	0·5	0·6	0·4	0·3	0·7	1·8	4·9	4·9	2·1	0·3	0·1	0·2	16·8

3.9 The rainy season is from June to September accounting for 90 per cent of the total annual rainfall. July and August are the rainiest months accounting for 66 per cent of the annual rainfall. June coefficient of variation (CV) is more than 100 in the west and ranges between 80 to 100 elsewhere. July CV exceeds 80 west of Jodhpur, lies between 60 and to 80 in Jodhpur and Jaipur and is less than 60 east of Jaipur. August CV is slightly higher than the July figures. CV exceeds 100 west of Jodhpur. In east Rajasthan CV is 60 to 80. CV in September is higher. East of Jaipur, CV is between 80 to 100 and in the west it exceeds 100. Rainfall in June is low with very higher variability. September is similar. Even the rainiest months of July and August have high variability. Only a small area east of Jaipur has CV in the range of 50 to 60 in July, the lowest in the State. The rainfall in this area is relatively more dependable than in the rest of the State. With such high variability, frequency of years of low rainfall or large negative deviation from normal is large resulting in droughts.

3.10 Normals of daily maximum, minimum and mean temperatures for a dozen observatory stations in the State are given in Tables 7—9. Monthly normals of daily minimum temperature vary from 5 to 7.5°C in January to 25 to 30°C in May and June and 25 to 27.5°C in July and August. The annual minimum temperatures vary between 17 to 20°C. Monthly normals of daily maximum temperature are 20°C to 25°C in January to 40-42.5°C in May and June. The annual maximum temperature is 32 to 34°C. Mean daily temperature is 15 ± 2°C in January and 33±2°C in May and June. The highest temperature recorded on any day during the past sixty years or more has exceeded 47.5°C over most of the State and reached as high as 50°C in some areas.

TABLE 7

Normals of Daily Maximum Temperature (°C)

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Ganganagar	20·5	24·1	29·6	36·3	41·5	42·1	38·8	37·3	36·6	35·0	29·4	23·3	32·9
Phalodi	22·7	26·3	32·1	37·6	41·6	40·0	36·9	34·5	35·5	35·2	30·3	24·7	33·2
Jodhpur	24·6	27·9	33·3	38·3	41·6	40·1	35·7	33·2	34·7	35·7	31·4	26·7	33·6
Barmer	24·7	20·6	33·9	38·9	41·9	40·3	36·1	33·8	35·3	36·0	31·5	27·0	34·0
Jaipur	22·0	25·4	30·9	36·5	40·6	39·2	34·1	31·9	33·2	33·2	29·0	24·4	31·7
Ajmer	22·2	25·3	30·7	35·9	39·5	38·1	33·2	30·9	32·1	32·9	28·9	24·4	31·2
Kota	24·5	28·5	34·1	39·0	42·6	40·3	33·3	31·7	33·1	34·5	30·8	26·7	33·3
Jhalawar	25·1	28·4	33·9	38·6	42·0	39·1	32·3	30·6	31·9	33·5	29·8	26·5	32·6
Jaisalmer	23·6	28·2	32·6	37·0	41·6	41·4	37·7	35·7	36·3	36·1	31·1	26·0	34·0
Bikaner	22·3	26·1	31·0	37·6	42·0	41·7	38·9	36·1	36·6	35·3	30·3	24·7	33·6
Sikar	22·0	26·2	31·5	36·4	39·7	39·1	34·7	33·1	33·7	33·1	29·1	24·0	32·0
Udaipur	24·2	27·6	32·3	36·0	38·6	35·9	30·7	29·3	30·9	32·0	29·1	26·3	31·1

TABLE 8

Normals of Daily Minimum Temperature (°C)

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Ganganagar	4·7	7·5	11.1	18.2	24.0	28.0	28.1	26.9	24.1	17.0	8.9	5.5	17.0
Phalodi	6.6	9.9	15.9	21.8	26.6	28.0	27.1	25.8	24.6	19.7	12.1	8.0	18.9
Jodhpur	9.5	12.0	17.1	22.4	27.3	28.5	26.8	25.2	24.1	19.6	13.9	10.7	19.8
Barmer	10.2	13.3	18.7	24.1	26.8	27.3	26.3	25.1	24.5	21.7	15.9	12.1	20.5
Jaipur	8.3	10.7	15.5	21.0	25.8	27.3	25.6	24.3	23.0	18.3	12.0	9.1	18.4
Ajmer	7.3	9.9	15.7	21.9	27.3	27.7	25.6	24.3	23.7	17.8	10.9	7.7	18.3
Kota	10.6	13.1	18.5	24.4	29.7	29.5	26.4	25.4	24.7	21.0	14.0	11.3	20.8
Jhalawar	9.4	11.4	16.4	22.0	27.3	27.5	24.9	24.1	23.2	18.3	12.2	9.6	18.9
Jaisalmer	7.9	10.6	16.9	21.4	25.8	27.3	26.5	25.5	24.5	20.1	13.0	8.9	19.0
Bikaner	5.0	8.2	14.4	20.8	27.2	29.3	28.0	26.6	25.2	18.6	10.0	5.6	18.2
Sikar	5.8	8.2	14.5	19.0	24.3	27.5	26.0	24.7	23.1	17.1	10.4	6.7	17.3
Udaipur	7.8	9.7	15.1	20.2	24.9	25.3	23.9	22.9	22.1	18.9	11.0	8.3	17.5

TABLE 9

Normals of Mean Daily Temperature (°C)

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Rajasthan West													
Ganganagar	12·6	15.8	20.4	27.3	32.8	35.1	33.5	32.1	30.4	26.0	19.2	14.4	25.0
Bikaner	13.7	17.2	23.1	29.2	34.6	35.5	33.5	31.4	30.9	27.0	20.2	15.2	26.0
Phalodi	14.7	18.1	24.0	29.7	34.1	34.4	32.0	30.2	30.1	27.5	21.7	16.4	26.1
Jaisalmer	15.8	19.3	24.8	29.6	33.7	34.4	32.1	30.7	30.4	28.1	22.1	17.5	26.6
Jodhpur	17.1	20.0	25.2	30.4	34.5	34.3	31.3	29.2	29.4	27.7	22.7	18.7	26.7
Barmer	17.5	21.0	26.3	31.5	34.4	33.8	31.2	29.5	29.9	28.9	23.7	19.6	27.3
Rajasthan East													
Sikar	13·9	17.2	23.0	27.7	32.0	33.3	30.4	28.9	28.4	25.2	19.8	15.8	24.7
Jaipur (Sanganer)	15.2	18.1	23.2	28.8	33.2	33.3	29.9	28.1	28.1	25.8	20.5	16.0	25.1
Ajmer	14.8	17.6	23.2	28.9	33.4	32.9	29.4	27.6	27.9	25.4	19.9	16.1	24.8
Kota	17.6	20.8	26.3	31.7	36.2	34.9	29.9	28.6	28.9	27.8	22.8	19.0	27.1
Udaipur	16.0	18.7	23.7	28.1	31.8	30.6	27.3	26.1	26.5	25.5	20.1	17.3	24.3
Jhalawar	17.3	19.9	25.2	30.3	34.7	33.3	28.6	27.4	27.6	25.9	21.0	18.1	25.8
Mount Abu	14.3	16.4	20.6	24.7	26.9	24.8	21.8	20.4	21.3	22.0	18.8	16.2	20.7

Potential Evapotranspiration (PE)

3.11 The monthly and annual PE values for a dozen stations in Rajasthan are given in Table 10. PE exceeds 180 cm annually in west Rajasthan and is of the order of 200 cm in Jaisalmer—Phalodi area. This is the area of highest PE in the country. In east Rajasthan, the annual values are of the order of 150 cm.

TABLE 10

Normals Monthly and Annual Potential Evapotranspiration (PE) (mm)

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Ganganagar	43.0	65.6	11.3	164.6	217.3	247.9	236.3	193.7	161.4	115.6	60.7	40.4	1662.2
Bikaner	53.3	75.3	131.4	172.4	236.8	258.3	220.2	196.6	177.7	124.7	68.3	48.8	1772.4
Phalodi	72.1	87.9	159.2	289.8	293.7	295.5	225.1	185.5	186.0	154.9	104.4	66.4	2041.0
Jodhpur	83.7	101.3	156.3	192.3	264.7	260.3	184.0	145.2	156.1	134.3	87.7	76.5	1843.0
Jaisalmer	78.6	91.6	153.2	203.5	281.8	317.4	247.6	210.7	192.0	145.0	83.9	64.1	2863.2
Barmer	81.0	100.5	159.7	206.7	259.4	239.4	178.1	152.3	163.6	147.1	92.2	77.1	1857.7
Sikar	51.9	73.8	126.8	166.6	215.1	214.1	155.9	133.0	134.4	113.9	60.4	48.7	1503.2
Jaipur	75.6	98.2	152.7	196.4	257.4	242.6	161.7	126.4	144.8	137.2	84.7	67.0	1745.2
Ajmer	55.2	76.5	130.0	174.5	243.0	229.3	155.8	128.3	142.1	113.9	86.4	502.6	1566.3
Kota	61.6	80.3	131.4	166.9	225.0	210.3	138.6	120.6	133.3	122.4	75.4	58.3	1524.7
Udaipur	59.3	78.5	125.3	158.9	204.4	178.7	119.5	102.3	115.3	112.3	70.9	55.2	1381.2
Jhalawar	66.9	86.9	136.4	171.8	229.9	213.5	140.8	125.8	129.6	118.2	75.0	60.7	1555.9

Climatic Classification

3.12 The whole of west Rajasthan and adjoining areas of Sikar, Jaipur and Ajmer come under the classification arid. The rest of the State is semiarid, aridity decreasing towards the east and south.

4 RAINFALL ZONES TOGETHER WITH THEIR CROPPING AND LIVESTOCK PATTERNS

4.1 The State is divided into 10 rainfall zones and one special zone. These are given below together with the number of taluks included in them and their total approximate area. The coded form given in the statement represents the distribution during the monsoon only (June to September). Rainfall in the months of February to May (pre-monsoon) and October to January (post monsoon) is less than 5 cm pm. The coded forms for these two seasons are the same E_4. As this is uniform for the whole State, E_4 is not repeated in the rainfall patterns describing each zone.

Rainfall Zone	*Rainfall Pattern*	*Number of taluk*	*Zonal areas sq km*
I	$D_2 E_2$	23	113,562
II	$C_1 D_1 E_2$	2	16,053
III	$C_2 D_1 E_1$	38	76,209
IV	$C_2 D_2$	23	24,331
V	$C_3 D_1$	20	14,345
VI	$B_1 C_1 E_2$	14	17,502
VII	$B_2 E_2$	21	22,731
VIII	$B_2 C_1 E_1$	37	36,618
IX	$A_1 B_1 C_1 E_1$	4	4,295
X	$A_2 C_1 E_1$	13	14,546
special	$A_1 B_1 E_2$	1	898
total		196	
reporting area			341,090

4.2 An introductory description of the rainfall zones is provided below before taking up their consideration in detail individually :

(a) The distribution of zonal areas varies from 4300 sq km to 1.1 lakh sq km. Zones I and III are the largest covering 33 and 22 per cent of the State's area respectively. Except for Zone IX, all the others exceed 14,000 sq km in area.

(b) Zone I, which covers Jaisalmer and Bikaner districts and portions of four adjoining districts, has the lowest rainfall with no month exceeding 10 cm pm. In Zone III, rainfall is distinctly better than Zones I and II with July and August receiving more than 10 cm pm. There is better distribution of rainfall from Zone V to X. Zone VIII has two months with 20 to 30 cm pm and one month with 10-20 cm of rainfall.

Rainfall Zone I—D_2 E_2

4.3 The districts, taluks and their cropping patterns in the Zone are given below :

Cropping Pattern	*Taluk*	*District*
B_1	Jaisalmer	Jaisalmer
	Pokaran	Do
	Pachpadra	Barmer
	Sheo	Do
$B_2Pu_4/F_4/Jk_4$	Shergarh	Jodhpur
B_3Pu_3/F_3	Kolavat	Bikaner
	Phalodi	Jodhpur
Pu_2B_3	Bikaner	Bikaner
	Nokha	Do
Pu_3B_3	Sardarshahar	Churu
	Dungargarh	Do
	Lunkaranser	Bikaner
$C_4W_4F_4$	Karanpur	Ganganagar
	Ganganagar	Do
	Padampur	Do
$W_4F_4G_4C_4/D_4$	Raisinghnagar	Do
	Anupgarh	Do
$G_3F_4B_4/W_4/C_4$	Sangaria	Do
	Hanumangarh	Do
	Tibi	Do
	Nohar	Do
	Sadulshahr	Do
	Suratgarh	Do

4.4 This Zone is the biggest, occupying a third of the total area of the State. Among the taluks, Jaisalmer with an area of 30 thousand sq km is the biggest. The distribution of taluks according to area is as under :

area sq km	less than 1000	1000—2000	2000—4000	4000—6000	6000—8000	8000—10000
no. of taluks	6	2	7	1	4	2

4.5 The population of the zone is only 2.7 million. The zonal average population density is only 24 persons per sq km, the lowest in the State, Jaisalmer district with an area of 39,000 sq km has an average density of 6 persons per sq km. Seventeen of the 23 taluks have density less than 50 except Ganganagar where the population density is 2.17. Because of the arid conditions, this zone is sparsely populated.

4.6 Ganganagar area shows small variations in elevation. Only in Sadhulshahr the range is 190 to 275 masl. Elsewhere in this area, the minimum and maximum elevations range between 150 and 225 masl. Although the minimum elevation in Barmer area is 150 masl, the upper limit reaches 660 masl. Elevations in Jaisalmer district vary from 100 to 340 masl. Elsewhere, heights vary mostly between 150 and 400 masl. Desert soils, mostly reghosolic, prevail in the zone.

4.7 Area under forests is negligible. Land not available for cultivation is 19 per cent of the reporting area and cultivable waste 40 per cent. Pasture lands are negligible and fallow lands account for 17 per cent. The net sown area is 22 per cent of the reporting area for the zone as a whole.

4.8 Irrigation is high in Ganganagar district, ranging between 60 and 90 per cent of net area sown and negligible elsewhere.

4.9 Zone I has eight patterns, three beginning with bajra, two with other pulses and one each with cotton, wheat and gram. Bajra occupies 85 to 95 per cent of the cropped area in Jaisalmer, Pokaran, Sheo and Panchpadra taluks and 50-60 per cent in Shergarh and Kolayat. Other pulses are dominant in Bikaner and Churu covering about 50 per cent area, followed by bajra with 35 to 45 per cent. Gram occupies 30 to 45 per cent of the cropped area in Sangaria, Hanumangarh, Tibi, Nohar, Sadul Shahar and Suratgarh followed by wheat with 10-20 per cent. Cotton is important in a few of the taluks.

4.10 The area under bajra is nearly a third of the cropped area in the zone and represents more than 15 per cent of the total bajra area in the State, the yields, however, are very low.

4.11 The area under gram is concentrated in Ganganagar district but the yield is less than the all-India level. Yields of other pulses are low not only in Bikaner and Churu but even in Ganganagar which has facilities for irrigation.

4.12 Sheep account for 39 per cent of the total livestock population. Bikaner taluks are grouped under S_2 and the rest under S_3 or S_4. Goats constitute 19 per cent followed by female cattle 22 per cent and male cattle 5 per cent in the zone. The camel population accounts for only 4.7 per cent of the total livestock, they do not occur in the pattern. The distribution of livestock in the taluks can be grouped under the following five patterns :

Taluk	*Pattern*
(i) Bikaner	S_2Cf_4
Kolayat	Do
(ii) Jaisalmer	$S_3G_4Cf_4/Cy_4/Cm_4$
Pokaran	Do
Sheo	Do
Nokha	Do
Lunkarnsar	Do
Anupgarh	Do
Suratgarh	Do
Nohar	Do
Sardarshahar	Do
Phalodi	Do
(iii) Sadulshahar	$S_4G_4Cf_4Cy_4Bf_4/Cm_4$
Ganganagar	Do
Sangaria	Do
Hanumangarh	Do
Tibi	Do
(iv) Pachpadra	$G_3S_4Cf_4/Cy_4$
Shergarh	Do
(v) Karanpur	$G_4S_4Bf_4Cy_4Cf_4/By_4$
Raisinghnagar	Do
Padampur	Do

Rainfall Zone II—C_1 D_1 E_2

4.13 This zone covers only 2 taluks in Barmer district and has an area of 16052 sq km. The total population of the zone is 5 lakhs and the population density is 30 persons per sq km.

4.14 The range in elevation is rather high from 100 to 650 masl. The soils are mainly desert rhegosolic.

4.15 Land not available for cultivation is 6 per cent, cultivable waste 9 per cent and permanent pastures 4 per cent of the reporting area. Fallow lands occupy considerable area, 73 per cent in Chohtan and 59 per cent in Barmer, thereby limiting the net sown area to 6 per cent in Chohtan and 23 per cent in Barmer. Irrigation facilities are not available.

4.16 The annual average rainfall is 27 cm in 14 rainy days. August is the month of maximum rainfall and July and August together account for about 75 per cent of the total annual rainfall.

4.17 The entire area is under bajra and the cropping pattern accordingly is B_1.

4.18 The yield of bajra is 45 per cent of the all-India level, which is low.

4.19 Goats constitute 43 per cent of the total livestock and sheep account for 31 per cent. Cattle account for 20 per cent and camels 4 per cent of the livestock population of the zone. The pattern is G_3 S_3.

Rainfall Zone III—C_2 D_1 E_1

4.20 The districts, taluks and cropping patterns included in the zone are shown below :

Cropping Pattern	*Taluk*	*District*
B_1	Jodhpur	Jodhpur
	Siwana	Barmer
	Jalore	Jalore
	Jaswantpura	Do
	Sanchore	Do
$B_2Pu_4/F_4/Jk_4$	Ahore	Do
	Khetri	Jhunjhunu
	Udaipurwati	Do
	Jhunjhunu	Do
	Neem-ka-Thana	Sikar
	Danta-Ramgarh	Do
	Sikar	Do
	Lachhmangarh	Do
	Fatehpur	Do
	Ladnu	Nagaur
	Didwana	Do
	Nawa	Nagaur
	Parbatsar	Do
	Degana	Do
	Jayal	Do
	Osian	Jodhpur
B_3Pu_3/F_3	Chirawa	Jhunjhunu
	Surajgarh	Churu

सत्यमेव जयते

Cropping Pattern	*Taluk*	*District*
$B_3 Pu_4/F_4$	Nagaur	Nagaur
	Bilara	Jodhpur
	Rajgarh	Churu
$B_3\ O_4\ Jk_4/F_4/Pu_4$	Jaitaran	Pali
	Sojat	Do
	Pali	Do
$B_4\ O_4\ Jk_4/F_4/Pu_4$	Metta	Nagaur
$B_4\ O_4\ Pu_5/Jk_4/W_4$	Raipur	Pali
$G_3\ F_4\ B_4/W_4/C_4$	Bhadra	Ganganagar
$Pu_3\ B_3$	Sawai Madhopur	Sikar
	Ratangarh	Churu
	Churu	Do
	Taranagar	Do
$F_4\ B_4\ O_4\ Jk_4$	Kharchi	Pali
$O_4\ F_4\ B_4\ Pu_4/M_4$	Sheoganj	Sirohi

4.21 The area of this zone is 76,209 sq km corresponding to 22 per cent of the total reporting area of the State. It comprises 38 taluks in 10 districts. All the taluks excepting Sheoganj (900 sq km) have areas exceeding 1000 sq km. The zone has a population of 6.3 lakhs with an average population density of 83. The population density varies from 41 in Osian to 174 in Udaipurwati.

4.22 While the general range of elevations is between 150 and 600 masl, some of the taluks in Jalore, Barmer, Jhunjhunu and Sikar districts have maximum elevation of upto 1000 masl.

4.23 Forest area varies from 1 to 12 per cent in different taluks. Land not available for cultivation occupies 10 per cent followed by fallow lands covering 22 per cent of the reporting area. Net sown area varies from 50 to 75 per cent, the average being 60 per cent.

4.24 Irrigated area constitutes generally 10 to 20 per cent of the net area sown. However, in Raipur (Pali district) 43 per cent of the area is under irrigation.

4.25 The zone has mainly rhegosolic desert soils. Grey-brown soils occur in parts of Sikar, Pali, Jhunjhunu and Nagaur.

4.26 The annual rainfall varies between 30 and 50 cm, the zonal average being 41 cm in 23 rainy days. The month of maximum rainfall is either July or August with more than 10 cm pm. July and August together account for more than 60 per cent of annual rainfall.

4.27 The predominant crops grown are bajra, pulses and fodder. Baira occupies about 50 per cent of the cropped area followed by pulses (20 per cent) Jowar, wheat and gram (2.3 per cent each) barley (1 per cent) and other oilseeds (4 per cent). The gross cropped area of the zone is about 30 per cent of the total cropped area of the State. The cropping patterns of the zone centre around bajra, seven of the eleven patterns beginning with bajra. In Churu and Sikar districts other pulses also are cultivated to a significant extent and the pattern is $Pu_3\ B_3$. Gram is dominant in Bhadra taluk with 35 per cent followed by bajra (27 per cent) and other pulses (22 per cent) and hence the pattern is $G_3\ F_4\ B_4\ /W_4/C_4$. Fodder has the largest area in Kharchi taluk and the pattern accordingly begins with F_4.

4.28 The yields of bajra in the western districts are less than 50 per cent of the all-India level. The yields of gram and pulses are also low.

4.29 The livestock of the zone are dominated by sheep and goats, each accounting for nearly 30 per cent of the total. Female and young stock of cattle constitute 11-12 per cent each. The livestock of the zone can be grouped under four patterns. The pattern beginning with sheep (S_3) occurs in largest number of taluks (24). The pattern beginning with G_3 occurs in 13 taluks. The livestock patterns in the zone are as follows :

Livestock Pattern	*Taluk*
$S_3\ G_4\ Cf_4/Cy_4/Cm_4$	Jodhpur
Do	Osian
Do	Jalore
Do	Jaswantpura
Do	Sanchore
Do	Ahore
Do	Danta Ramgarh
Do	Nagaur
Do	Landu
Do	Didwana
Do	Jayal
Do	Nawa
Do	Parbatsar
Do	Degana
Do	Merta
Do	Sujangarh
Do	Raipur
Do	Kharachi
Do	Jaitram
Do	Sojat
Do	Pali
Do	Ratangarh
Do	Bilara
Do	Bhadra
$G_3\ S_4\ Cf_4/Cy_4$	Siwana
Do	Jhunjhunu
Do	Chirawa
Do	Khetri
Do	Udaipurwati
Do	Sikar
Do	Lachmangarh
Do	Fatehpur
Do	Sheoganj
Do	Taranagar
Do	Rajgarh
Do	Churu
$G_3\ S_4\ Cf_4\ Cy_4/By_4$	Neem-ka-Thana
$G_4\ S_4\ Cm_4\ \ Cf_4\ Bf_4/Cy$	Srimadhopr

Rainfall Zone IV—C. D.

4.30 The districts, taluks and cropping patterns included in the Zone are :

Cropping Pattern	*Taluk*	*District*
M_2 Pu_4 Gn_4/Ba_4	Bhim	Udaipu
	Deogarh	Do
M_3 O_4 Ba_5 $(Pu_4/W_4/C_4)$	Amet	Do
	Rajsamund	Do
	Raipur	Bhilwara
M_3 W_4 Ba_4 $O_4/Gn_4/C_4$	Asind	Do
	Mandal	Do
M_4 W_4 Ba_4 (F_4/Jk_4) O_5	Hurda	Do
M_4 Jk_4 B_4 Ba_2	Beawar	Ajmer
B_3 Pu_4 G_4 Ba_4/F_4	Kotputli	Jaipur
	Bairath	Do
	Amber	Do
	Jamwa Ramgarh	Do
	Phulera	Do
	Jaipur	Do
	Sanganer	Do
B_3 O_4 Pu_5 Jk_4/W_4	Ajmer	Ajmer
B_4 Ba_4 W_4 $Pu_4/G_4/O_4/Gn_4$	Chaksu	Jaipur
	Phagi	Do
Jk_4 B_4 O_4 Pu_4/M_4	Dudu	Jaipur
	Kishangarh	Ajmer
Jk_4 W_4 G_4 M_4	Sarwar	Do
	Malpura	Tonk

4.31 The Zone covers seven per cent of the area of the State and has 22 taluks distributed in four districts and one taluk in Tonk district. Areas of about half the number of taluks range between 500 and 1200 sq km, whereas the rest exceed 1200 sq km. The population of the zone is 3.6 million with an average density of 165 persons. A third of the taluks have population density ranging from 67 to 100.

4.32 The elevation of the zone is well above 300 masl. In Udaipur area, heights range between a minimum of 600 and maximum of 1000 masl. Elsewhere, the elevations range between 400 to 900 masl.

4.33 Forest are negligible except in Bhim taluk of Udaipur district which has half its area under forests whereas in Jaipur and Ajmer, the forest area ranges from 5 to 10 per cent, the zonal average being 5 per cent. Land not available for cultivation is 16 per cent, cultivable waste (14 per cent), fallow lands (11 per cent). The net sown area on an average for the zone is 45 per cent, though it varies from 15 to 25 per cent in Udaipur and 25 to 35 per cent in Bhilwara. Jaipur has the highest net sown area of 50 to 70 per cent.

4.34 Red and yellow soils dominate with significant areas in Jaipur and Tonk with recent alluvial soils and mixed red and black soils in Bhilwara and Ajmer. The Zone is moderately irrigated.

4.35 The annual rainfall of the Zone is 55 cm in 30 rainy days. July and August are the rainiest months accounting for two-thirds of the annual precipitation. These are the only months with more than 10 cm pm of rainfall in the year.

4.36 The main crops of the zone are maize, bajra and other pulses. Maize is dominant in 9 taluks of Udaipur, Bhilwara and Ajmer districts whereas bajra is dominant in 10 taluks (9 in Jaipur and 1 in Ajmer). Jowar is dominant in the remaining four taluks. The area and the relative yield index of maize, bajra, wheat, other pulses, jowar and barley are given in Table 11. The maize yields are low suggesting that rainfall may not be adequate. The bajra yields are satisfactory and above the all-India level. The yields of jowar, pulses and wheat are low as compared to the all-India yield. The yields of barley are higher than the all-India level.

TABLE 11

Area and Relative Yield Index of Principal Crops in Zone IV

Area= '000 ha

District		Maize	Bajra	Wheat	Other pulses	Jowar	Barley
Udaipur	Area	184	—	—	36	—	41
	RY I*	89			102		154
Bhilwara	Area	122		51	29	33	40
	RY I	37		89	67	28	119
Ajmer	Area	55	60	40	50	114	32
	RY I	54	105	81	57	31	112
Jaipur	Area	—	284	76	214	39	101
	RY I		115	100	75	50	153

*Relative Yield Index represents district yield expressed as per cent of the corresponding all-India average yeild for 1968-69 to 1970-71.

4.37 Goats constitute 30 per cent of the total livestock, followed by sheep 25 per cent and male, female and youngstock of cattle 10-12 per cent each. • The zone has seven livestock patterns and the taluks grouped according to those livestock patterns are as follows :

Pattern	*Taluk*	*District*
$G_3\ S_4\ Cf_4/Cy_4$	Bhim	Udaipur
	Deogarh	Do
$G_3\ Cm_4\ S_4\ /Cf_4/Cy_4$	Jamwa-Ramgarh	Jaipur
	Bairath	Do
$G_3\ S_4\ Cm_4\ Cf_4/Cy_4$	Amet	Udaipur
	Rajsamand	Do
$G_3\ S_4\ Cm_4\ Cf_4/Cy_4$	Chaksu	Jaipur
	Phagi	Do
$G_3\ S_4\ Cf_4\ Cy_4/Bf_4$	Kotputli	Do
G_4 S4 $Cm_4\ Cf_4\ Bf_4/Cy_4$	Amber	Do
	Jaipur	Do
	Sanganer	Do
$S_3\ G_4\ Cf_4/Cy_4/Cm_4$	Raipur	Bhilwara
	Asind	Do
	Mandal	Do
	Hurda	Do
$S_4\ G_4\ Cm_4\ Cf_4/Cy_4$	Ajmer	Ajmer
	Beawar	Do
	Kishangarh	Do
	Sarwar	Do
	Phulera	Jaipur
	Dudu	Do
	Malpura	Tonk

Rainfall Zone V—C_3 D_1

4.38 The districts, taluks and cropping patterns included in the Zone are as follows :

Cropping Pattern	*Taluk*	*District*
$B_3\ G_4\ W_4/Ba_4$	Behror	Alwar
	Mandawar	Do
	Kishangarh	Do
	Tijara	Do
	Todabhim	Sawai Madhopur
$B_3\ Pu_4\ G_4\ Ba_4/F_4$	Bensur	Alwar
	Thanagazi	Do
$B_4\ Ba_4\ W_4\ Pu_4\ G_4/O_4/Gn_4$	Bassi	Jaipur
	Dausa	Do
	Baswa	Do
	Sikrai	Do
	Weir	Bharatpur
	Mahwa	Sawai Madhopur
$W_4\ Jk_4\ G_4/B_4$	Nadauti	Do
$G_4\ W_4\ B_4\ Jk_4/O_4$	Lachhmangarh	Alwar
	Alwar	Do
	Kaman	Bharatpur
	Nagar	Do
	Nadbai	Do
$G_4\ W_4\ B_4\ Jk_4/Ba_4$	Rajgarh	Alwa.

4.39 The area of the zone is 14,345 sq km, comprising 20 taluks in the four eastern districts of Alwar (9) Bharatpur and Jaipur (4 each) and Sawai Madhopur (3). The area of fifteen taluks ranges between 500 and 1000 sq km and three between 400 and 500 sq km. Only two taluks are more than 1000 sq km in area. The zonal average population density is 180. Eight taluks have population density exceeding 200, the highest being 218 in Behror (Alwar district). Only four have population density ranging between 100 and 150.

4.40 The heights are mostly between 300 and 500 masl. In a few taluks, the maximum reaches 600-670 masl.

4.41 Area under forest is negligible. Nearly 15 to 20 per cent of land is not available for cultivation and cultivable waste is very little. Permanent pastures range between 5 and 10 per cent and fallow lands are negligible. The net sown area constitutes 66 per cent of the reporting area.

4.42 The area under irrigation ranges from 30 to 40 per cent in Jaipur, 20 to 35 per cent in Bharatpur and 15 to 20 per cent in Alwar. The dominant soils in the Zone are recent alluvial, red and yellow. In the eastern part of Bharatpur, medium black soils occur.

4.43 The annual average rainfall is 60 cm in 34 rainy days, July and August are the rainiest months accounting for 60 per cent of the annual rainfall. September gets more than 10 cm rainfall and June gets 5 to 10 cm.

4.44 · Bajra and gram are the two major crops of the Zone each occupying 26 to 27 per cent of the area. Wheat accounts for 10 to 25 per cent of the area in different taluks of the Zone with an average of 13 per cent. Area under barley ranges from 6 to 13 per cent with an average of 8 per cent. Jowar area accounts for 5 to 13 per cent in a number of taluks of Sawai Madhopur, Alwar and Bharatpur, with the Zonal average of 5 per cent. Of the seven patterns in the Zone, four begin with bajra, two with gram and one with wheat. The area under different crops and their Relative Yield Indices are given in Table 12. The yields of bajra and gram are above the all-India average. The yield of other pulses is good except in Jaipur district. The yields of jowar and groundnut are rather low.

TABLE 12

Area and Relative Yield Index of Principal Crops in Zone V

Area= '000 ha

District		Bajra	Gram	Wheat	Barley	Pulses	Jowar	Groundnut
Alwar	Area	165	150	63	45	198	21	—
	RYI*	85	125	134	139	147	86	
Bharatpur	Area	130	141	113	24	168	32	—
	RYI	144	124	122	124	157	51	
Jaipur	Area	284	66	76	101	214	32	28
	RYI	115	126	100	153	75	50	54
Sawai Madhopur	Area	144	94	79	35	126	63	35
	RYI	135	107	96	114	123	112	64

*Relative Yield Index represents district yield expressed as per cent of the corresponding all-India average yeild for 1968-69 to 1970-71.

4.45 The population of goats is high in the Zone accounting for a third of the total livestock. Sheep account for 9 per cent, male cattle 14 per cent, female cattle 12 per cent and youngstock 9 per cent. Population of camels is negligible. The livestock population can be grouped under seven patterns, six of them beginning with goats and one, covering two taluks, beginning with male cattle as follows :

Pattern	*Taluk*	*District*
$G_3\,Cm_4\,S_4/Cf_4/Cy_4$	Thanagazi	Alwar
$G_3\,S_4\,Cm_4\,Cf_4/Cy_4$	Rajgarh	Do
	Kishangarh	Do
	Alwar	Do
	Tijara	Do
	Nadauti	Sawai Madhopur
	Dausa	Jaipur
	Baswa	Do
	Sikrai	Do
$G_3\,S_4\,Cm_4\,Cy_4/By_4$	Bansur	Alwar
$G_4\,S_4\,Cm_4\,Cf_4\,Bf_4/Cy_4$	Luchhmangarh	Do
	Bassi	Jaipur
	Weir	Bharatpur
	Nagar	Do
$G_4\,Cm_4\,Cf_4\,Cy_4\,Bf_4$	Toda Bhim	Sawai Madhopur
	Mahwa	Do
$G_4\,By_4\,Cf_4\,Cy_4\,S_4/Cm_4$	Behror	Alwar
	Mandawar	Do
$Cm_4\,G_4\,Bf_4\,By_4\,Cf_4$	Nadbai	Bharatpur
	Kaman	Do

Rainfall Zone VI—B_1 C_1 E_2

4.46 The districts, taluks and cropping patterns included in the Zone are as follows :

Pattern	*Taluk*	*District*
M1	Kotra	Udaipur
$M_4\,Mt_5\,W_5$	Kumbalgarh	Do
	Gogunda	Do
$M_2\,W_4\,Ba_4/Mt_4/Gn_4$	Girwa	Do
	Mavli	Do
	Phalasia	Do
	Nathdwara	Do
$M_3\,Pd_4\,W_4\,G_4/Mt_4$	Kherwara	Do
$M_3\,W_4\,O_4\,Mt_4/Pu_4$	Pindwara	Sirohi
$M_4\,W_4\,Jk_4\,Gn_4/C_4$	Railmagra	Udaipur
$F_3\,O_4\,M_4$	Desuri	Pali
$O_4\,F_4\,B_4\,Pu_4/M_4$	Bali	Do
$B_4\,O_4\,Pu_4\,Mt_4/F_4$	Sirohi	Sirohi
	Reodhar	Do

4.47 The Zone has an area of 17.5 thousand sq km comprising 14 taluks. Kotra and Bali taluks have the largest area of 2400 sq km followed by five taluks in Udaipur district, having areas between 500 and 1000 sq km and the rest between 1000 and 1700 sq km. The population of the zone is 1.7 million with an average population density of 98. Half the number of taluks exceed a population density of 100.

4.48 Udaipur area is an elevated plateau, heights ranging between 600 and 1200 masl. The base is 300 masl in the rest of the Zone and rises to 1100 masl in some of the taluks.

4.49 Forest occupies 10 per cent of the area. Land not available for cultivation is 30 per cent, cultivable waste 5 per cent and permanent pastures 10 per cent. Fallow lands occupy 28 per cent of area in Pali and 20 per cent in Sirohi, the zonal average being 11 per cent. The net sown area is 25 per cent.

4.50 Area under irrigation ranges from 15 to 30 per cent. Soils in the zone are mainly red and yellow but in Pali area, grey brown soils predominate.

4.51 The zone gets an annual rainfall of 60 cm in 30 rainy days. July is the month of maximum rainfall in Udaipur area and August elsewhere. July and August account for two-third of the annual precipitation. September rainfall is 7 to 10 cm and that in June 4 to 7 cm.

4.52 Maize is the principal crop of the Zone occupying nearly a third of the total cropped area. Seven of the ten cropping patterns of the zone begin with maize. Area under wheat, which is 8 per cent, is grown all over the zone with areas ranging from 5 to 10 per cent. Bajra, though accounting for 8 per cent of the cropped area in the Zone, is cultivated only in taluks of Sirohi (25-30 per cent) and Pali (5-15 per cent). Hence, one pattern covering two taluks of Sirohi district begins with bajra (B_4). Other oilseeds, occupy 15-20 per cent of the area in Sirohi and Pali districts and 3 to 7 per cent elsewhere, the zonal average under these crops being 10 per cent. As such "other oilseeds" emerge as the second largest item after maize. An interesting feature in the cropping pattern is the occurrence of paddy in the pattern for Kherwara taluk (16 per cent).

4.53 There are 9 cropping patterns in the Zone, 6 beginning with maize and one each with bajra, fodder and other oilseeds, as follows :

Crop	*Number of taluks*	*Number of patterns*	*Pattern*	*Number of taluks*
maize	9	4	M_1	1
			M_2	5
			M_3	2
			M_4	1
bajra	1		B_4	1
other oilseeds	1		O_4	1
fodder	1		F_3	1

4.54 Areas under different crops and their Relative Yield indices are given in Table 13. The yield of maize, bajra and other pulses are quite low; only the yields of wheat and barley are near the all-India level.

TABLE 13

Area and Relative Yield Index Values of Principal Crops in Zone VI

Area= '000 ha

District		Maize	Wheat	Bajra	Barley	Pulses
Udaipur	Area	184	49	—	41	—
	RYI*	89	112		154	
Pali	Area	28	—	154	26	31
	RYI	45		83	98	64
Sirohi	Area	18	27	46	4	23
	RYI	85	91	52	96	48

*Relative Yield Index represents district yield expressed as per cent of the corresponding all-India average yield for 1968-69 to 1970-71.

4.55 Goats account for 31 per cent of the livestock population followed by sheep 17 per cent and male, female and youngstock cattle 12 per cent each. The livestock patterns are given below :

Pattern	*Taluk*	*District*
$G_3\ S_4\ Cf_4/Cy_4$	Sirohi	Sirohi
	Reodhar	Do
	Bali	Pali
	Desuri	Do
$G_3\ Cf_4\ Cy_4$	Kotra	Udaipur
	Phalasia	Do
$G_3\ S_4\ Cm_4\ Cf_4/Cy_4$	Kherwara	Do
	Girwa	Do
	Nathdwara	Do
	Gogunda	Do
	Kumbhalgarh	Do
	Mavli	Do
$G_3\ S_4\ Cy_4\ Cn_4$	Pindwara	Sirohi
$S_4\ G_4\ Cn_4\ Cf_4\ /Cy_4$	Railmagra	Udaipur

Rainfall Zone VII—B_2 E_2

4.56 The districts, taluks and cropping patterns included in the zone are given below :

Cropping Pattern	*Taluk*	*District*
$B_3\ G_4\ W_4\ Gn_4$	Gangapur	Sawai Madhopur
$B_4\ Ba_4\ W_4\ Pu_4/G_4/O_4/Gn_4$	Malarnachor	Do
	Nawai	Tonk
	Lalsot	Jaipur
$M_3\ W_4\ Ba_4\ O_4/Gn_4/C_4$	Mandalgarh	Bhilwara
	Banera	Do
	Kotri	Do
	Bhilwara	Do
$M_3O_4\ Ba_5\ (Pu_4/W_4/C_4)$	Sahara	Do
$M_4\ W_4\ Ba_4\ O_5$	Hindoli	Bundi
$M_4\ W_4\ Ba_4\ (F_4/Jk_4)\ O_5$	Shahpura	Bhilwara
	Jahazpur	Do
$M_4\ W_4\ Jk_4\ Gn_4/C_4$	Rashmi	Chittaurgarh
	Gangrar	Do
	Begun	Do
$Jk_3\ W_4\ G_4/M_4/C_4/Pu_4$	Tonk	Tonk
	Uniara	Do
	Todaraisingh	Do
	Deoli	Do
$Jk_4\ W_4\ G_4\ M_4$	Kekri	Ajmer
$W_4\ Jk_4\ G_4\ B_4$	Bamanwas	Sawai Madhopur

4.57 The area of the zone is 22,700 sq km, comprising 21 taluks distributed in seven district. Areas of taluks vary between 450 and 2400 sq km. The Zone has a population of 2.2 million with a population density of 95 persons per sq km.

4.58 Elevations are highest in Bhilwara ranging between 450 and 850 masl. Elsewhere, heights range between 300 and 600 masl.

4.59 Forest area is negligible. Land not available for cultivation varies between 10 and 20 per cent in most of the taluks. Cultivable waste lands range between 25 and 40 per cent in Bhilwara and Chittaurgarh districts and elsewhere constitute about 10 per cent of the reporting area. Net sown area is about 25-40 per cent in Bhilwara, 14 to 44 per cent in Chittaurgarh and 60 to 70 per cent in Tonk and Sawai Madhopur.

4.60 Area under irrigation is 30 to 50 per cent of cropped area in Bhilwara and Chittaurgarh, 72 per cent in Hindoli and 15 to 30 per cent elsewhere. Recent alluvial soils prevail in Tonk and Jaipur areas, red and yellow in Sawai Madhopur and Ajmer areas and mixed red and black soils elsewhere.

4.61 The annual rainfall is about 70 cm in 35 rainy days. July and August together contribute 70 per cent of total annual rainfall, with each month getting more than 20 cm pm.

4.62 Maize is the main crop in Bhilwara, Bundi and Chittaurgarh areas occupying 20 to 40 per cent of the cropped area. Wheat is grown all over the zone covering on an average 10 to 20 per cent of the cropped area. Nearly a third of the cropped area in Tonk is under jowar followed by barley (6 to 10 per cent) and gram (10 to 20 per cent). The cropping patterns are as follows :

	Number of patterns		*Number of taluks*	*District*
maize	5	M_3	5	Bhilwara Chittaurgarh Bundi
		M_4	6	
bajra	2	B_3	1	Sawai Madhopur Tonk Jaipur
		B_4	3	
jowar	2	Jk_3	4	Tonk
		Jk_4	1	Ajmer
wheat	1	W_4	1	Sawai Madhopur

4.63 Areas and Relative Yield indices of the major crops grown in this zone are given in Table 14. The above data indicates that yield of maize, jowar and wheat are generally low. Bajra yields are satisfactory. The yields of barley and gram are above the all-India levels in most of the districts.

TABLE 14

Area and Relative Yield Index Values of Principal Crops in Zone VII

(Area= '000 ha)

District/crop		Maize	Bajra	Jowar	Wheat	Barley	Gram
Bhilwara	Area	122	—	—	51	40	18
	RYI*	73			89	109	69
Chittaurgarh	Area	88	—	61	76	8	19
	RYI	100		87	104	132	132
Bundi	Area	22	—	—	68	—	48
	RYI	80			86		124
Sawai Madhopur	Area	—	144	—	79	35	94
	RYI		135		86	114	107
Tonk	Area	—	41	129	84	42	73
	RYI		101	46	58	105	73
Ajmer	Area	—	—	114	—	—	—
	RYI			31			
Jaipur	Area	—	284	—	—	101	66
	RYI		115			153	126

*Relative Yield Index represents district yield expressed as per cent of the corresponding all-India average yield for 1968-69 to 1970-71.

4.64 Goats and sheep constitute 26 and 24 per cent of the total livestock population respectively. Cattle population is significant with male, female and young stock accounting for 13, 13 and 11 per cent respectively. The taluks could be grouped under the following five livestock **patterns** :—

Pattern	*Taluk*	*District*
$G_3\ S_4\ Cm_4\ Cf_4/Cy_4$	Malarnachor	Sawai Madhopur
	Bamanwas	Do
	Nawai	Tonk
	Uniara	Do
	Lalsot	Jaipur
	Mandalgarh	Bhilwara
	Jahazpur	Do
	Hindoli	Bundi
	Rashmi	Chittaurgarh
	Gangrar	Do
$G_4\ Cm_4\ Cf_4\ Cy_4\ Bf_4$	Gangapur	Sawai Madhopur
$G_4\ Cn_4\ Cf_4\ Cy_4$	Begun	Chittaurgarh
$S_3\ G_4\ Cf_4/Cy_4/Cm_4$	Banera	Bhilwara
	Kotri	Do
	Bhilwara	Do
	Shahpura	Do
	Kekri	Ajmer
$S_4\ G_4\ Cm_4\ Cf_4/Cy_4$	Tonk	Tonk
	Toda Raisingh	Do
	Deoli	Do
	Sahra	Bhilwara

Rainfall Zone VIII—$B_2\ C_1\ E_1$

4.65 The districts, taluks and the cropping patterns included in the zone are as follows:—

Cropping Pattern	*Taluk*	*District*
$M_2\ W_4\ Ba_4/Mt_4/Gn_4$	Salumbar	Udaipur
	Sarada	Do
$M_3\ Pd_4\ W_4\ G_4/Mt_4$	Lasadia	Do
	Dungarpur	Dungarpur
	Aspur	Do
$M_4\ Pd_4\ G_4\ Mt_4\ C_4/W_4$	Sagwara	Do
	Garhi	Banswara
	Bagidora	Do
$M_4\ W_4\ Jk_4\ Gn_4/C_4$	Chittaurgarh	Chittaurgarh
	Kapasan	Do
	Bhadosar	Do
	Nimbhera	Do
	Dungla	Do
	Bari Sadri	Do
	Chhoti Sadri	Do
	Vallabh Nagar	Udaipur
$W_3\ Jk_4\ G_4/O_4$	Ladpur	Kota
	Digod	Do
	Bundi	Bundi
$W_4\ G_4\ B_4\ O_4$	Rupbas	Bharatpur
$B_3\ G_4\ W_4/Ba_4$	Baseri	Bharatpur
	Bari	Do
	Rajakhera	Do
	Dholpur	Do
	Hindaun	Sawai Madhopur
	Karauli	Do
$B_3\ G_4\ W_4\ Gn_4$	Sapotra	Do
$B_4\ W_4\ G_4\ O_4/Ba_4/Pu_4/Gn_4$	Beyana	Bharatpur
$Jk_3\ W_4\ G_4\ /M_4/C_4/Pu_4$	Pipalda	Kota
	Ramganjmandi	Do
	Nainwa	Bundi
	Keshoraipatan	Do
	Pachpahar	Jhalawar
$Jk_3\ B_4\ (G_4\ W_4)\ (O_4\ Pu_4)$	Khandar	Sawai Madhopur
$Jk_4\ W_4\ G_4\ M_4$	Pratapgarh	Chittaurgarh
$G_4\ W_4\ B_4\ Jk_4/O_4$	Bharatpur	Bharatpur
	Deeg	Do

4.66 This is a major zone with an area of 36,618 sq km covering 37 taluks spread over 9 contiguous southern and eastern districts. The districts, taluks and their area are indicated in Table 15.

The areas of individual taluks also vary widely. Talukwise area distribution is as follows :

area sq km	300-500	501-1000	1001-2000	Greater than 2000
no. of taluks	3	21	12	1

Tabe 15

Areas of Taluks

District	Number of taluks	Area sq km.
Udaipur	4	4489
Dungarpur	3	3782
Banswara	2	1567
Chittaurgarh	8	6813
Kota	4	4374
Bundi	3	4242
Bharatpur	8	5815
Sawai Madhopur	4	4824
Jhalawar	1	712

4.67 The population of the zone is 4.4 million corresponding to a population density of about 120 per sq km which is below the all-India level, but higher than the State average. Twenty five per cent of the taluks have a population density exceeding 150 and 66 per cent exceeding 100.

4.68 Sarada (Udaipur district) is the only taluk where the maximum elevation reaches 800 masl and elsewhere, the maximum elevation is less than 600 masl. Most of Chittorgarh area has base elevation of more than 400 masl. The maximum elevation in more than one-third taluks is less than 300 masl.

4.69 While forest occupies 11 per cent of the area in the zone, there are five taluks with 30 per cent or more area under forest. Above 54 per cent of area in Sarada taluk of Udaipur district is not available for cultivation, but it ranges from 10 to 30 per cent in most of the taluks of Bharatpur and Udaipur. Cultivable waste is about 20 to 35 per cent in Chittorgarh district, whereas it is negligible in other areas. The zonal average for permanent pastures is 7 per cent and fallow lands 4 per cent. Net sown area varies from 13 per cent in Lasadia to over 80 per cent in three taluks of Bharatpur district; the zonal average being 41 per cent.

4.70 Area under irrigation varies widely among taluks, with twenty taluks having more than 30 per cent of cropped area under irrigation, two taluks 57 per cent and remaining taluks 10 to 30 per cent.

4.71 The annual average rainfall of the zone is about 75 cm in 35 rainy days. July and August are the months of maximum rainfall and these together account for two thirds of the annual precipitation. July and August get more than 20 cm pm followed by September with 10-20 cm rainfall.

4.72 Wheat, jowar, maize and gram are the main crops and occupy about 60 per cent of the total cropped area. Bajra, small millets and oilseeds are important only in certain parts of the zone. Wheat is grown all over the zone occupying 19 per cent of the cropped area followed by jowar (15 per cent), maize (12 per cent) and gram (13 per cent). Small millets are cultivated on a small scale in Banswara and Dungarpur areas only. Paddy cultivation is singnificant in Dungarpur and Banswara taluks where it is grown on 10-20 per cent of the cropped area. Oilseeds occupy 10-20 per cent area in Bharatpur, the zonal average being 7 per cent. The above indicates that none of the crops has large areas exceeding 50 per cent which is reflected in the composition of the cropping patterns. The zone has 13 patterns, 4 beginning with maize, 2 with wheat, 3 each with jowar and bajra and one with gram which are indicated below :

Crop	*Number of patterns*			*Number of Taluks*
maize	4	M_2	1	2
		M_3	1	3
		M_4	2	11
wheat	2	W_3	1	3
		W_4	1	1

4.73 The areas and Relative Yield Indices of the various crops grown in this zone are given in Table 16.

TABLE 16

Area and Relative Yield Index Values of Principal Crops in Zone VIII

(Area= '000 ha)

District/crop		Wheat	Jowar	Maize	Gram	Bajra	Small millets	Paddy	Barley	Cotton
Udaipur	Area	49	25	184	20	—	11	13	41	10
	RYI*	112	57	89	107		80	42	154	70
Dungarpur	Area	16	—	50	17	—	16	31	3	—
	RYI	101		61	62		105	42	137	
Chittaurgarh	Area	76	61	88	19	—	—	2	8	21
	RYI	104	87	100	132			46	132	100
Kota	Area	171	200	18	86	—	—	7	6	—
	RYI	67	104	64	84			74	123	
Bundi	Area	68	58	22	48	—	—	6	9	—
	Rpi	86	77	80	124			85	124	
Bharatpur	Area	113	—	—	141	139	—	6	24	—
	RYI	122			124	144		36	124	
Sawai Madhopur	Area	79	63	6	94	144	—	7	35	—
	RYI	96	112	56	107	135		56	114	
Jhalawar	Area	41	—	—	—	—	—	—	—	—
	RYI	65								
Banswara	Area	—	10	73	30	—	21	36	3	23
	RYI		61	66	76		50	91	134	93

*Relative Yield Index represents district yield expressed as per cent of the corresponding all-India average yield for 1968-69 to 1970-71.

Wheat yields are higher than all-India average in a few districts, except in Kota and Jhalawar districts. Though rainfall is quite sufficient for jowar crop, the yields are below the all-India average, except in Kota and Sawai Madhopur districts. The yield of maize is quite low, but yields of bajra and gram are quite good. Since barley is grown under irrigated conditions, the yields in all districts are above all-India level. Though cotton is grown under irrigated conditions to a certain extent, the yield are not good.

4.74 Goats constitute 29 per cent of livestock population, followed by male cattle 17 per cent, female cattle 14 per cent and young stock 13 per cent. All the rest account for less than 10 per cent of the livestock population. The dominance of goats is clearly reflected in all the patterns of the zone, excepting one covering 3 taluks, which begins with male cattle. The livestock patterns are indicated below :

Pattern	*taluks*	*District*
G_3 Cf_4 Cy_4	Lasadia	Udaipur
	Pachpahar	Jhalawar
G_3 Cm_4 S_4 /Cf_4/Cy_4	Bagidora	Banswara
	Keshoripatan	Bundi
	Khandar	Sawai Madhopur
G_3 S_4 Cm 4 Cf_4/Cy_4	Sapotra	Swai Madhopur
	Dungarpur	Dungarpur
	Bundi	Bundi
	Nainwa	Do.
	Vallabhnagar	Udaipur
	Salumbar	Do.
	Sarada	Do.
G_3 S_4 Cf_4 Cy_4	Chittaurgarh	Chittaurgarh
	Kapasan	Do.
	Bhadesar	Do.
G_3 Cm_4 Cf_4 Cy_4	Lasadia	Udaipur
	Bagidora	Banswara

Pattern	Taluks	District
	Karauli	Sawai Madhopur
	Sapotra	Do
	Khandar	Do
	Piploda	Kota
	Bundi	Bundi
	Kishoripatan	Do
	Jhalawar	Jhalawar
$G_3\ Cm_4\ Cf_4\ Cy_4\ S_4$	Sarada	Udaipur
	Dungarpur	Dungarpur
	Chittaurgarh	Chittaurgarh
	Kapasan	Do
	Bhadeshar	Do
	Digod	Kota
	Nainwar	Bundi
$G_4\ Cm_4\ Cf_4\ Cy_4$	Sagwara	Dungarpur
	Garhi	Do
	Nimahera	Chittaurgarh
	Bari Sadri	Do
	Chotti Sadri	Do
	Pratapgarh	Do
	Ladpura	Kota
	Ramganj Mandi	Do
	Rajakhera	Bharatpur
	Beyana	Do
$G_4\ Cm_4\ Cf_4\ Cy_4\ S_4$	Salumbar	Udaipur
	Vallabhnagar	Dungarpur
	Aspur	Do
	Dungla	Chittaurgarh
	Hindaun	Sawai Madhopur
$Bf_3\ Cm_4\ Cf_4\ S_4$	Rupbas	Bharatpur
	Bari	Do
	Dholpur	Do
	Bharatpur	Do
	Deeg	Do
	Baseri	Do

Rainfall Zone IX—$A_1\ B_1\ C_1\ E_1$

4.75 The district, taluks and cropping patterns included in the zone are as follows :

Cropping pattern	Taluks	Distrjct
$Jk_3\ W_4\ G_4/M_4/C_4/Pu_4$	Mangrol	Kota
	Baran	Do.
	Sangod	Do.
$W_3\ Jk_4\ G_4/O_4$	Shahbad	Do.

4.76 The area of this zone is only 4300 sq km and includes four taluks located in Kota district, their areas varying between 632 and 1469 sq km. The population of the zone is 3.2 lakhs and the population density 85. Shahbad taluk with a density of 33 is the most sparsely populated whereas Mangrol and Baren taluks have population density exceeding 100.

4.77 The heights are uniform throughout the zone and range between 200 and 300 masl.

4.78 One third of the area of Shahbad is under forests, and it is negligible elsewhere. Land not available for cultivation and cultivable waste range between 10 and 30 per cent. Permanent pastures occupy 5 per cent of the area and the extent of fallow land is negligible. The net sown area is about 90 per cent of the cropped area.

4.79 Soils are mixed red and black with medium black in the central part. One third of the area of Mangrol is irrigated.

4.80 It is a zone with good rainfall of about 90 cm in 42 rainy days. July and August are the rainiest months with more than 20 cm pm accounting for 70 per cent of the annual precipitation.

4.81 Jowar, wheat and gram are the main crops, occupying 34, 27 and 15 per cent of cropped area respectively. Jowar is dominant except in Shahbad where wheat is grown on a large area. Other oilseeds (16 per cent) are important in Shahbad instead of gram.

4.82 The area under jowar, wheat and gram and their Relative yield Indices (per cent) are given in Table 17. The yield of wheat is low.

TABLE 17

Area and Relative Yield Index of Principal Crops in Zone IX

Crop	Area '000ha	RY I*
Jowar	200	104
Wheat	171	67
Gram	86	84

*Relative Yield Index represents Kota district yield expressed as per cent of the corresponding all India average yield for 1968-69 to 1970-71.

सत्यमेव जयते

4.83 Goats account for 25-30 per cent of the livestock population except in Shahbad, where the average is only 8 per cent. Male cattle constitute 22 per cent, female cattle 17 per cent and young stock 18 per cent of total livestock. The livestock patterns are :

Shahbad	$Cf_4\ Cm_4\ Cy_4\ Bf_4$
Rest	$G_4\ Cm_4\ Cf_4\ Cy_4$

Rainfall Zone X—$A_2\ C_1\ E_1$

4.84 The districts, taluks and cropping patterns included in the zone are :

Cropping Pattern	Taluks	District
$Jk_3\ W_4\ G_4/M_4/Pu_4$	Kishanganj	Kota
	Atru	Do
	Chhabra	Do
	Chipabarod	Do
	Khanpur	Jhalawar
	Jhalrapatan	Do
	Aklera	Do
$Jk_3\ C_4\ M_4\ B_4/W_4$	Pirawa	Do
	Gangadhar	Do
$Jk_3\ B_4\ (G_4\ W_4)\ /O_4\ Pu_4$	Sawai Madhopur	Sawai Madhopur
$M_3\ Pd_4\ W_4\ G_4/Mt_4$	Ghatol	Banswara
$M_4\ W_4\ Jk_4\ Gn_4/C_4$	Banswara	Do
$M_4\ Pd_4\ G_4\ Mt_4\ C_4/W_4$	Kushalgarh	Do

4.85 The Zone has an area of 14,500 sq km and comprises 13 taluks of four districts Jhalawar (5), Kota (4), Banswara (3) and Sawai Madhopur (1). Five taluks have areas ranging between 800 and 950 sq km with the remaining taluks exceeding 1000 sq km. The population of the Zone is 1.4 million with an average population density of 97. Except for Kishanganj which has a low population density of 43, in other taluks the population density varies between 80 and 135.

4.86 The Zone is an area with small height variations, ranging between 300 and 500 masl.

4.87 Forest occupies about 16 per cent of area, land not available for cultivation occupies 17 per cent, and permanent pastures 5 to 10 per cent. Net sown area constitutes from 40 to 60 per cent of the reporting area, the zonal average being 43 per cent.

4.88 Only 10 to 20 per cent of the area is under irrigation. Soils are either mixed red and black or medium black.

4.89 This is a Zone of good rainfall, the annual average being 98 cm in 42 rainy days. July is the rainiest month and together with August accounts for 60 per cent of annual precipitation. Both these months get more than 30 cm of rainfall each. September rainfall is 10 to 20 cm.

4.90 The main crops of this Zone are jowar, maize, wheat and gram. Jowar occupies a third of the cropped area. Wheat is grown on 20-30 per cent of the cropped area in taluks of kota district and on 5 to 15 per cent area elsewhere. Gram is grown on 10 to 20 per cent of the cropped area in a number of the taluks. Cotton is grown on 10 to 20 per cent of the cropped area in some of the taluks of Banswara and Jhalawar districts. The Zone has six cropping patterns, three beginning with jowar and three with maize as follows:

Cropping		*Number of taluk*	*District*
jowar	Jk_3	9	**Kota, Jhalawar and Sawai Madhopur**
maize	M_3	2	**Banswara**
	M_4	2	**Banswara**

सत्यमेव जयते

4.91 Areas under different crops and their Relative Yield Indices are furnished in the Table 18. The yield of Jowar are above the all-India level except in Banswara. The yields of maize, gram and wheat are on the low side.

TABLE 18

Area and Relative Yield Index Values of Crops in Zone X

Area— '000 ha

District		Jowar	Maize	Wheat	Gram	Cotton
Kota	Area	200	18	171	86	—
	RYI*	104	64	67	84	
Jhalawar	Area	128	35	41	22	23
	RYI	116	72	65	62	71
Sawai Madhopur	Area	63	6	79	94	—
	RYI	112	56	96	107	
Banswara	Area	10	73	16	30	23
	RYI	61	66	100	76	93

*Relative Yield Index represents district yield expressed as per cent of the corresponding all-India average yield for 1968-69 to 1970-71.

4.92 The livestock population of the Zone consists mainly of goats and cattle. Goats account for 28 per cent of the total livestock followed by male cattle (19 per cent), female cattle (16 per cent) and youngstock of cattle (17 per cent). The taluks could be grouped into the following five livestock patterns.

Taluk	*Pattern*
Banswara	$G_3\ Cm_4\ S_4\ /Cf_4/Cy_4$
Ghatol	Do.
Kushalgarh	Do.
Pirawa	$G_3\ Cf_4\ Cy_4$
Gangadhar	Do.
Sawai Madhopur	$G_3\ S_4\ Cm_4\ Cf_4/Cy_4$
Chipabarod	$G_4\ Cm_4\ Cf_4\ Cy_4$
Khanpur	Do
Atru	Do
Jhalrapatan	Do
Aklera	Do
Kishanganj	$Cf_4\ Cm_4\ Cy_4\ Bf_4$
Chhabra	Do.

Rainfall Zone Special—A_1 B_1 E_2

4.93 Only Abu Road taluk of Sirohi district is included in this Zone. Its cropping pattern is $M_3\ W_4\ O_4\ Mt_4/Pu_1$. The area of this taluk is 900 sq km and its population is 84,000 with a population density of 94.

4.94 This is a taluk with the highest elevation, the elevations ranging between 263 and 1158 masl.

4.95 Land not available for cultivation is very high comprising about three quarters of the taluk area. Fallow lands, pastures, etc. are negligible. Net sown area is only 16 per cent of the reporting area.

4.96 Soils are red yellow and one-sixth of the area is irrigated.

4.97 The annual everage rainfall is 85 cm in 36 rainy days. July is the month of maximum rainfall. July and August together account for more than 75 per cent of total rainfall.

4.98 Maize is the dominant crop in the taluk, occupying nearly a third of the cropped area. Small millet, bajra and wheat are important being grown on 10 to 15 per cent of the area. Other oilseeds account for about 10 per cent. The pattern for this Zone along with the noighbouring taluk, Pindwara is $M_3\ W_1\ O_1\ Mt_4/Pu_4$.

4.99 Forty per cent of the livestock population comprise of goats. Sheep, male, female and young stock of cattle each constitutes 11 to 13 per cent. The pattern is $G_3\ S_4\ Cy_4\ Cm_4$.

5 OBSERVATIONS FOR FUTURE CROPPING PATTERNS

General

5.1 In the foregoing sections we have dealt with in detail the rainfall, cropping and livestock patterns which emerge from the existing information. We have also categorised the rainfall patterns into zones and discussed how the other patterns feature in those zones. Among other information that on soils, which ought to play an important role in determining cropping patterns, are lacking in such details as are wented for this analysis. Data on orography and population density have featured in this analysis but their exact role on cropping and livestock patterns could not be brought out owing to lack of detailed information. We are, however, convinced that studies and analysis indicated in the preceding sections are important for the guidance they may give in deciding cropping and livesock patterns *vis a vis* rainfall patterns. The greater the accuracy of the primary information, and the more detailed such information is, the more useful they would be in predicting the most efficient cropping and livestock patterns in an area for zone. It is suggested that for this purpose the following procedure may be followed :

- (i) Delineation of rainfall zones ;
- (ii) Indentification of the existing cropping patterns;
- (iii) Assessment of area needed for each crop and its ideal distribution.
- (iv) Comparison of (iii) with (ii) in order to determine possible changes ; and
- (v) Consideration of other related factors like soil, irrigation facilities, density of population, livestock patterns and then arriving at the future cropping patterns.

5.2 The methods of delineating rainfall patterns or zones and cropping patterns have been fully discussed in Section 2. For the purpose of locating suitable areas for a crop, soil and topography of the land are important factors. The approximate area to be put under each crop will be decided by its demand not only at the State but also at the national level, both for internal consumption and export. The departments responsible for crop planning of a State should, therefore, be cognisant of the demand for a crop, so that production efforts are not rendered futile because of lack of demand and marketing facilities. We have already discussed the part each of the factors mentioned in para 5.1 (v) is likely to play in determining cropping patterns. For this purpose not only detailed data but also knowledge about the correlation between these factors and crop performance would be necessary. Knowledge gained, through long experience, by farmers would be most helpful.

5.3 We may mention that the rainfall intervals which form the basis of identifying rainfall patterns are subject to minor modifications. Thus the condition that 30 cm of rainfall for three consecutive months is good for paddy may not be rigourously adhered to. If the soil is favourable with a high water retention capacity or, what is more important, water management is efficient and economic, even rainfall lower than 30 cm for three months may sustain a good crop of paddy.

5.4 The choice of a cropping pattern is not decided by the farmer only on technical grounds. He is guided by the profitability of the crop or requirements for his own consumption. Farmers may not be inclined to accept a new crop unless necessary inputs and infrestructure are assured. Of all the inputs water is the most important as is made evident by the spread of groundnut in the country, sugarcane in Gujarat maize and cotton in Karnataka, and recently of wheat in West Bengal. These are excellent instances of the manner of introduction of new crops in the cropping patterns of a State or a region.

Some Observations Pertaining to Rajasthan

5.5 There is considerable scope and need for changing cropping patterns in Rajasthan. Cropping patterns in irrigated areas commanded by the Rajasthan Canal as suggested in the Interim Report on Desert Development are as follows :

Crops	*Percentage of Canal command area to be brought under a parti-cular crop*
kharif	
vegetables	1·0
cotton	11·2
groundnut	4·0
pulses	8·0
fodder crops (zaid and kharif)	15·0
bajra or jowar	10·0
total kharif	49·0
rabi	
wheat	24·0
oilseeds	10·0
peas	7·0
berseem	1·0
other fodder	14·0
total rabi	56·0

The cropping patterns recommended in the Interim Report are based on the intensity of irrigation being 105 per cent.

5.6 There are in all 62 taluks in the 11 districts of western Rajasthan. In 23 taluks in the districts of Ganganagar, Churu, Bikaner, Jodhpur, Jaisalmer and Barmer, the rainfall conditions are adequate for arable cropping. The months of June and September get less than 5 cm pm, whereas in July and August rainfall ranges between 5 and 10 cm pm. Farmers are at present trying to take various crops, bajra and moth being the most common. Their yields are, however, very poor. In the Interim Report, we have not favoured dependence on arable cropping alone in this Region. The Zone is most suited for growing grasses, for fodder purposes as well as for seed.

5.7 Underground water has been tapped in many places even in the above mentioned taluks representing conditions of extreme aridity. Wherever irrigation is available, the emphasis could be in the following directions :

- (i) Dry atmospheric conditions automatically eliminate to a great extent many pests and diseases and, therefore, are very conducive to healthy growth of crops. Because of this reason, the dry areas are particularly suited for seed production. The arid areas could grow quality seed of various kinds of crops in large quantities for supply to other parts of the country. This would improve to a very great extent the local economy.
- (ii) Vegetable and orchard crops could be a good choice. Oilseeds like sunflower and safflower could also be tried. The Region could specialise in the production of various kind of vegetables both for consumption and seed production.

5.8 Tremendous efforts will be required to bring about the suggested changes. Research scientists would have to develop and demonstrate the economic possibility of such changes and development workers will have to build up the needed infrastructure to facilitate the adoption of the suggested cropping patterns. In other parts of the state, conditions are a little better than in the region of extreme aridity. Even then the choice will have to be largely for hardy, drought resistant or drought escaping crops. Bajra, jowar, **moth** and **guar** predominate in any combination in the northern parts of the State. Gram, barley and wheat occur under comparatively better rainfall regimes. As one trevels southward in Rajasthan to the east of the Aravallis, bajra gives way to jowar and some oilseeds like sesame and groundnut also appear and in the southern parts, jowar is replaced by more water requiring crops like maize and cotton.

5.9 In the areas to the east of Aravallis, the existing choice of crops for rainfed conditions appears to be generally appropriate. However, where irrigation is possible, the crops which have been suggested for the drier areas could also be grown in these parts.

5.10 Guar gum is used in various industries even now. The prospects of its increased use in this manner are likely to be better in future. Eastern parts of Rajasthan could increase the area under this crop. Area under oilseeds and fodder also needs to be stepped up.

सत्यमेव जयते

APPENDIX 1

Talukwise Land Use (1969-70) and Population Statistics

RAJASTHAN

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp & gl	mtc &g	fallow lands	net area sown
	total	per sq km							
	Rainfall	*Zone—1*	..	..	..	..	*Rainfall*	*Pattern—E4(D_2E_2)*	E_4
Jaisalmer									
Jaisalmer	87,652	3	19 (1)	1,538 (51)	1,303 (44)	32 (1)	— (—)	84 (3)	3 (·1)
Pokaran	79,109	9	— (—)	145 (16)	560 (62)	45 (5)	— (—)	129 (14)	26 (3)
Barmer									
Pachpadra	124,041	36	·1 (·1)	30 (9)	21 (6)	11 (3)	— (—)	181 (53)	102 (29)
Sheo	57,945	9	10 (2)	50 (7)	291 (44)	120 (18)	— (—)	156 (23)	36 (6)
Jodhpur									
Shergarh	135,654	36	— (—)	28 (5·4)	2 (2)	15 (3)	— (—)	163 (43·4)	174 (46)
Bikaner									
Kolavat	58,321	7	·4 (—)	60 (8)	574 (72)	8 (1)	— (—)	89 (11)	63 (8)
Jodhpur									
Phalodi	153,225	20	— (—)	79 (10)	13 (1)	46 (6)	1 (—)	371 (48·4)	265 (34)
Bikaner									
Bikaner	313,583	34	8 (1)	26 (3)	655 (71)	12 (1)	— (—)	131 (14)	90 (10)
Nokha .	125,698	32	— (—)	15 (4)	76 (20)	6 (1)	— (—)	91 (24)	192 (51)
Churu									
Sardarshahar	129,476	34	— (—)	18 (5)	33 (9)	9 (2)	— (—)	100 (26)	225 (58)
Dungargarh	92,290	31	·4 (·2)	10 (3)	35 (12)	8 (3)	— (—)	89 (30)	158 (52)
Bikaner									
Lunkaransar	75,547	12	— (—)	18 (3)	495 (78)	8 (1)	— (—)	21 (3)	95 (15)
Ganganagar									
Karanpur	95,046	116	— (—)	6 (7)	— (—)	— (—)	1 (1)	26 (31)	50 (61)
Ganganagar	213,864	217	— (—)	7 (7)	·1 (·1)	— (—)	— (—)	14 (14)	77 (78)
Padampur	93,260	111	— (—)	6 (7)	— (—)	— (—)	·3 (·4)	23 (27)	(66)
Raisinghnagar	90,411	68	— (—)	7 (6)	11 (8)	— (—)	·1 (·1)	59 (45)	54 (41)
Anupgarh	79,127	23	·4 (·1)	11 (3)	235 (70·4)	— (—)	— (—)	31 (9)	58 (17)

— = nil or negligible.
nac = not available for cultivation.
cw = culturable waste .
pp&gl = permanent pastures and other grazing lands.
mtc&g = miscellaneous tree crops and groves not included in net area sown.

NOTE : Figures in brackets represent percentages to total reporting area .

सत्यमेव जयते

APPENDIX I (*Contd.*)

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	total	per sq km							
	Rainfall Zone—I (concld.)		..		..	..		*Rainfall Pattern*—E_4 (D_2E_2) E_4	
Ganganagar									
Sangaria	72,629	105	— (—)	5 (7)	·1 (·2)	— (—)	— (—)	10 (14)	55 (79)
Hanumangarh	135,380	112	3 (2)	11 (9)	1 (1)	— (—)	— (—)	23 (19)	83 (69)
Tibi	71,237	96	— (—)	5 (7)	·3 (·4)	— (—)	— (—)	5 (6)	64 (87)
Nohar	182,397	42	— (—)	14 (3)	61 (14)	1 (·2)	— (—)	50 (12)	309 (71)
Sadulshahar	68,187	89	— (—)	5 (7)	— (—)	— (—)	— (—)	12 (15)	60 (78)
Suratgarh	157,513	41	— (—)	14 (4)	126 (33)	— (—)	— (—)	85 (22)	156 (41)
	Rainfall Zone—II							*Rainfall Pattern*—E_4 ($C_1D_1E_2$) E_4	
Barmer									
Chohtan	133,161	28	—	32 (7)	41 (9)	22 (5)	— (—)	348 (73)	27 (6)
Barmer .	361,516	32	—	62 (5)	103 (9)	41 (4)	— (—)	673 (59)	258 (23)
	Rainfall Zone—III		..	..		..		*Rainfall Pattern*—E_4 (C_2D_1E1) E_4	
Jodhpur									
Jodhpur	476,695	136	1 (·2)	45 (13)	4 (1)	12 (4)	— (—)	102 (29)	186 (53)
Barmer									
Siwana	98,142	48	2 (1)	39 (19)	12 (6)	10 (5)	— (—)	116 (56)	26 (13)
Jalore									
Jalore	163,358	73	2 (1)	25 (11)	2 (1)	12 (5)	— (—)	83 (37)	101 (45)
Jaswantpura	233,253	68	3 (1)	55 (16)	2 (1)	17 (5)	— (—)	87 (25)	179 (52)
Sanchore	148,959	49 66	— (—)	28 (9)	13 (4)	14 (5)	— (—)	120 (40)	127 (42)
Ahore	122,380		1 (·3)	20 (11)	2 (1)	9 (5)	— (—)	88 (48)	65 (35)
Jhunjhunun									
Khetri .	227,323	155	16 (11)	17 (12)	3 (2)	12 (8)	— (—)	3 (2)	96 (65)
Udaipurwati	266,38	174	18 (12)	7 (5)	2 (1)	8 (5)	— (—)	6 (4)	112 (73)
Jhunjhunun	226,161	142	·2 (·1)	4 (3)	1 (1)	15 (9)	— (—)	10 (6)	129 (81)
Sikar									
Neem-ka-Thana	158,891	134	2 (2)	40 (33·4)	7 (6)	9 (7)	— (—)	4 (3)	57 (48)
Danta Ramgarh	163,905	119	·2 (·1)	10 (8)	2 (2)	8 (6)	... (—)	17 (13)	99 (71)
Sikar	231,756	153	1 (1)	13 (9)	1 (1)	8 (6)	— (—)	14 (9)	114 (74)
Lachhmangarh	135,858	111	2 (1)	3 (2)	2 (1)	7 (6)	— (—)	14 (11·4)	95 (78)
Fatehpur	124,892	117	4 (4)	3 (3)	1 (1)	6 (6)	(—)	13 (12)	80 (74)
Nagaur									
Ladnu	102,625	82	— (—)	8 (6)	— (—)	5 (4)	— (—)	27 (22)	(85) (68)

APPENDIX 1 (*Contd.*)

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	total	per sq km							
	Rainfall Zone—III (contd.)			..	..	..	*Rainfall Pattern*—$E_4(C_2D_1E_1)$ E_4		
Didwana	150,845	92	— (—)	9 (5)	— (—)	5 (3)	— (—)	32 (19·4)	119 (72)
Nawa .	152,620	100	— (—)	21 (14)	2 (·1)	5 (3)	— (—)	28 (19)	98 (64)
Parbatsar	218,108	98	2 (1)	19 (9)	1 (·3)	9 (4)	— (—)	53 (24)	(139 62)
Degana	133,529	70	— (—)	14 (8)	1 (1)	8 (4)	— (—)	34 (18)	132 69)
Jayal	106,307	51	— (—)	14 (7)	·1 (·1)	13 (6)	— (—)	37 (18)	144 (69)
Jodhpur									
Osian	172,129	41	0·2 (—)	41 (8)	2 (·4)	27 (6)	— (—)	141 (34)	208 (51)
Jhunjhunun									
Chirawa	209,358	157	— (—)	5 (4)	1 (1)	11 (8)	— (—)	2 (2)	115 (85)
Churu									
Sujangarh	173,293	64	— (—)	13 (5)	10 (4)	3 (1)	— (—)	47 (18)	197 (72)
Nagaur									
Nagaur	241,358	51	— (—)	43 (9)	3 (1)	27 (6)	— (—)	109 (23)	289 (61)
Jodhpur									
Bilara	215,009	63	·4 (·1)	47 (14)	1 (·4)	13 (4)	— (—)	81 (24)	198 (58)
Churu									
Rajgarh	155,546	71	·1 (·1)	11 (5)	2 (1)	11 (5)	— (—)	8 (4)	188 (85)
Pali									
Jaitaran	106,582	77	2 (1)	22 (16)	1 (1)	10 (7)	— (—)	24 (17)	79 (58)
Sojat	111,977	67	6 (3)	21 (13)	3 (2)	11 (7)	— (—)	52 (31)	74 (44)
Pali	181,443	59	2 (1)	33 (11)	2 (1)	23 (7)	— (—)	144 (46)	104 (34)
Nagaur									
Merta	156,765	68	— (—)	25 (11)	2 (1)	9 (4)	— (—)	40 (18)	154 (66)
Pali									
Raipur	95,047	93	6 (6)	36 (35)	1 (1)	6 (6)	— (—)	14 (13)	40 (39)
Ganganagar									
Bhadra .	134,960	78	— (—)	7 (4)	3 (2)	— (—)	— (—)	5 (3)	158 (91)
Sikar									
Srimadhopur .	227,346	165	1 (1)	14 (10)	5 (4)	10 (7)	— (—)	8 (6)	100 (72)
Churu									
Ratangarh	114,472	67	— (—)	5 (3)	3 (2)	7 (4)	— (—)	27 (16)	127 (75)
Churu	129,486	81	1 (1)	11 (7)	2 (1)	1 (1)	— (—)	23 (15)	121 (75)

सत्यमेव जयते

APPENDIX 1 (*Contd.*)

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	total	per sq km							
	Rainfall Zone—III(concld) ..			..	..	*Rainfall Pattern* –$E_4(C_2D_1E_1)$ E_4			
Taranagar	79,876	44	— (—)	7 (4)	1 (1)	5 (3)	— (—)	13 (7)	156 (85)
Pali									
Khareh	116,816	84	9 (7)	18 (13)	2 (1)	8 (6)	— (—)	45 (32)	57 (41)
Sirohi									
Sheogunj	69,186	77	2 (2)	29 (33)	4 (4)	6 (7)	— (—)	18 (20)	30 (34)
	Rainfall Zone—IV ..		..	..	..	*Rainfall Pattern—*E_4 (C_2D_2) E_4			
Udaipur									
Bhim	73,764	106	35 (50)	12 (18)	1 (2)	8 (11)	— (—)	2 (7)	11 (16)
Deogarh	54,401	91	1 (2)	25 (41)	10 (17)	9 (15)	— (—)	4 (7)	11 (18)
Amet	56,599	106	·2 (·3)	26 (33)	25 (33)	13 (17)	— (—)	2 (3)	10 (14)
Rajsamand	89,904	148	·2 (·3)	19 (31)	14 (22)	7 (12)	— (—)	5 (9)	16 (26)
Bhilwara									
Raipur	53,409	103	— (—)	9 (18)	15 (30)	6 (12)	— (—)	6 (12)	15 (28)
Asind	122,566	108	2 (2)	20 (18)	33 (29)	14 (12)	— (—)	14 (13)	30 (26)
Mandal	116,784	96	1 (1)	18 (15)	45 (36)	14 (12)	— (—)	14 (12)	29 (24)
Hurda	56,466	92	0·1 (1)	10 (16)	12 (20)	6 (9)	— (—)	11 (18)	22 (36)
Ajmer									
Beawar	239,221	164	6 (4)	49 (34)	13 (9)	16 (10)	— (—)	12 (8)	51 (35)
Jaipur									
Kotputli	147,883	179	3 (4)	16 (19·4)	3 (4)	4 (5)	— (—)	2 (3)	53 (64)
Bairath	157,047	154	13 (13)	18 (18)	9 (9)	8 (8)	·1 (·1)	4 (4)	50 (48·5)
Amber	211,014	169	7 (6)	10 (8)	3 (2)	8 (6)	·2 (·1)	12 (9·4)	85 (68)
Jamwa Ramgarh	156,256	114	12 (9)	36 (26)	12 (9)	11 (8)	·1 (·1)	9 (7)	57 (41)
Phulera	188,954	129	·1 (·1)	8 (6)	7 (5)	9 (6)	— (—)	32 (22)	90 (61·5)
Jaipur	667,937	1,267	5 (9)	6 (12)	3 (6)	2 (4)	·2 (·4)	7 (14)	29 (55)
Sanganer	99,209	141	1 (1)	5 (8)	3 (5)	4 (6)	— (—)	11 (16)	45 (64)
Ajmer									
Ajmer	511,809	224	16 (7)	48 (21)	21 (9)	16 (7)	— (—)	30 (13)	97 (43)
Jaipur									
Chaksu	90,266	111	— (—)	7 (8)	8 (10)	8 (10)	— (—)	8 (10)	50 (62)
Phagi .	82,388	74	0·4 (0·4)	8 (8)	13 (12)	12 (10)	— (—)	10 (9)	68 (61)
Dudu .	89,954	67	0·2 (0·1)	10 (7)	16 (12)	13 (10)	— (—)	26 (19·4)	69 (51)

APPENDIX I (*Contd.*)

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	total	per sq km							
	Rainfall Zone—IV (concld.)			..	..		*Rainfall Pattern—E_4 (C_2D_2) E_4*		
Ajmer									
Kishangarh	157,954	91	7 (4)	18 (11)	30 (17)	12 (7)	— (—)	24 (14)	82 (47)
Sarwar	75,890	73	3 (3)	10 (10)	19 (18)	11 (11)	— (—)	8 (8)	52 (50)
Tonk									
Malpura	106,423	73	0·4 (0·3)	14 (9·4)	21 (15)	16 (11)	— (—)	9 (6)	85 (58)
	Rainfall Zone—V		..	..	..		*Rainfall Pattern—E_4(C_3D_1) E_4*		
Alwar									
Behror	159,437	218	1 (1)	9 (12)	2 (3)	5 (6·5)	— (—)	1 (1)	56 (77)
Mandawar	106,649	186	1 (1)	10 (17)	1 (1)	4 (6)	— (—)	1 (1)	42 (74)
Kishangarh	137,364	184	1 (1)	12 (16)	1 (1)	4 (6)	— (—)	2 (3)	55 (73)
Tijara	102,510	150	4 (6)	12 (16·5)	2 (3)	4 (6)	0·1 (0·2)	1 (2)	45 (67)
Sawai Madhopur									
Todabhim	106,792	196	1 (2)	7 (13)	2 (4)	5 (9)	— (—)	2 (3)	38 (69)
Alwar									
Bansur	97,876	148	1 (2)	14 (21)	3 (5)	5 (8)	— (—)	2 (3)	40 (61)
Jhanagazi	87,446	120	2 (2)	39 (52·6)	5 (7)	3 (4)	— (—)	3 (4)	22 (31)
Jaipur									
Bassi	102,555	157	1 (1)	9 (13)	4 (6)	5 (8)	— (—)	5 (8)	42 (63·4)
Dausa	144,405	157	1 (2)	11 (12)	10 (11)	8 (9)	— (—)	7 (8)	54 (58·4)
Baswa	131,629	209	1 (2)	9 (14)	5 (9)	8 (13)	— (—)	3 (4)	37 (58)
Sikrai	93,543	186	1 (2)	9 (18·4)	2 (4)	4 (7)	1 (1)	2 (5)	31 (63)
Bharatpur									
Weir	117,060	191	7 (11)	6 (9)	0·4 (1)	3 (4)	— (—)	2 (3)	44 (72)
Sawai Madhopur									
Mahwa	96,828	203	1 (1)	5 (11)	2 (4)	3 (6)	— (—)	1 (3)	36 (75)
Naduati	65,738	101	5 (8)	9 (14)	3 (5)	3 (5)	— (—)	2 (3)	42 (65)
Alwar									
Lachhmangarh	233,135	201	0·3 (0·2)	13 (11)	4 (3)	1 (1)	— (—)	2 (2)	96 (83)
Alwar	312,558	215	5 (4)	34 (24)	5 (3)	6 (4)	— (—)	2 (2)	93 (63·6)
Bharatpur									
Kaman	148,161	202	— (—)	10 (15)	2 (3)	3 (4)	— (—)	2 (3)	55 (75)
Nagar	97,442	208	— (—)	5 (11)	1 (2)	0·3 (1)	— (—)	1 (2)	40 (84·4)
Nabdai	90,390	202	— (—)	3 (6)	0·5 (1)	0·5 (1)	— (—)	0·5 (1)	40 (91)

APPENDIX 1 (*Contd.*)

(thousand hectares)

District/taluk	population 1971 total	population 1971 (per sq km)	forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	Rainfall Zone — V (concld.)			..	..		*Rainfall Pattern—E_4 (C_3 D_1) E_4*		
Alwar									
Rajgarh	154,186	162	3 (3)	32 (34)	7 (8)	7 (7)	— (—)	3 (3)	43 (45)
	Rainfall Zone—VI			..	..		*Rainfall Pattern—E_4 ($B_1C_1E_2$) E_4*		
Udaipur									
Kotra	76,699	32	121 (50)	83 (34)	7 (3)	8 (3)	— (—)	5 (2)	18 (8)
Kumbhalgarh	82,897	107	2 (4)	14 (25·4)	12 (21)	12 (21)	— (—)	4 (7)	12 (21)
Gogunda	83,175	95	1 (2)	46 (53)	14 (16)	12 (13)	— (—)	3 (3)	12 (13)
Girwa	311,841	183	17 (10)	92 (53·4)	15 (9)	20 (12)	— (—)	4 (2)	23 (14)
Mavli	119,036	141	1 (1)	11 (13)	28 (33)	10 (13)	— (—)	8 (10)	25 (30)
Phalasia	87,239	72	8 (7)	43 (35)	22 (17·5)	13 (11)	— (—)	9 (7)	28 (23)
Nathdwara	130,849	139	1 (1)	31 (33)	31 (33)	12 (12·6)	— (—)	4 (4)	16 (17)
Kherwara	121,266	111	16 (14)	40 (36)	12 (11)	11 (10)	— (—)	6 (6)	25 (23)
Sirohi									
Pindwara	95,838	85	28 (25)	32 (29)	7 (6)	8 (7)	— (—)	10 (9)	27 (24)
Udaipur									
Railmagra	68,126	122	— (—)	7 (12)	17 (31)	6 (12)	— (—)	4 (8)	21 (37·4)
Pali									
Desuri	131,992	103	13 (10)	21 (16)	1 (1)	11 (8)	— (—)	35 (27)	48 (37·5)
Bali	226,245	95	30 (13)	45 (19)	2 (1)	18 (7)	— (—)	68 (28)	76 (32)
Sirohi									
Sirohi	89,541	76	13 (11)	29 (25)	8 (6)	7 (6)	— (—)	29 (25)	32 (27)
Reodhar	85,126	78	4 (4)	29 (27)	3 (3)	10 (9)	— (—)	18 (16)	44 (41)
	Rainfall Zone—VII		..	..	..		*Rainfall Pattern—E_4 (B_2 E_2) E_4*		
Sawai Madhopur									
Gangapur	123,934	192	2 (3)	6 (9)	4 (6)	7 (11)	— (—)	2 (3)	44 (68)
Malarnachor	102,420	101	3 (3)	10 (10)	13 (13)	8 (7)	— (—)	5 (5)	63 (62)
Tonk									
Nawai	95,863	93	2 (2)	10 (10)	12 (11)	12 (11)	— (—)	6 (6)	62 (60)
Jaipur									
Lalsot	119,345	137	5 (6)	12 (14·4)	7 (8)	6 (7)	01 (0·1)	7 (8)	49 (56)
Bhilwara									
Mandalgarh	112,385	73	5 (3)	58 (37·4)	46 (30)	13 (9)	— (—)	4 (3)	27 (18)
Banera	63,831	94	1 (1)	6 (10)	22 (32)	7 (10)	— (—)	12 (17)	20 (29·4)

APPENDIX I (*Contd.*)

(thousand hectares)

District/taluk	population 1971 total	per sq km	forests	nac	cw	pp&gl	mtc &g	fallow lands	net area sown
	Rainfall Zone —VII (contd.)			..	..	*Rainfall Pattern* E_4 (B_2 E_2) E_4			
Kotri	81,855	88	2 (3)	26 (28)	26 (28)	12 (13)	·1 (.1)	3 (3)	24 (25·5)
Bhilwara	171,270	178	1 (1)	12 (13)	31 (32)	9 (9)	— (—)	15 (16)	28 (29)
Sahara	73,308	112	·4 (1)	7 (11)	16 (25)	9 (13·4)	— (—)	10 (16)	22 (34)
Bundi									
Hindoli	97,168	70	11 (8)	68 (48)	12 (9)	6 (5)	1 (1)	10 (7)	31 (22)
Bhilwara									
Shahpura	101,825	90	2 (2)	10 (9)	28 (25·5)	12 (11)	— (—)	14 (12)	47 (42)
Jahazpur	101,191	93	5 (5)	25 (23)	25 (23)	10 (10)	— (—)	6 (5)	7 (34)
Chittaurgarh									
Rashmi	50,139	111	·4 (1)	4 (8)	14 (29)	5 (11)	— (—)	3 (7)	20 (44)
Gangrar	70,533	97	1 (3)	10 (14)	34 (45)	9 (12)	— (—)	2 (2)	17 (24)
Begun	125,625	52	39 (14)	81 (36)	71 (29)	12 (5)	— (—)	4 (2)	33 (14)
Tonk									
Tonk	166,470	112	2 (2)	14 (10)	11 (8)	11 (8)	— (—)	7 (5)	103 (60·5)
Uniara	75,880	77	5 (5)	8 (8)	10 (10)	4 (4)	— (—)	3 (4)	69 (69)
Todaraisingh	75,484	77	3 (3)	8 (8)	10 (10)	12 (12)	— (—)	3 (3)	63 (64)
Deoli	105,710	85	5 (4)	17 (14)	16 (13)	13 (11)	— (—)	4 (3)	70 (55·4)
Ajmer									
Kekri	162,855	90	3 (2)	18 (10)	31 (17)	19 (11)	— (—)	13 (7)	97 (53)
Sawai Madhopur									
Bamanwas	79,135	109	2 (3)	11 (15)	5 (7)	6 (8)	— (—)	3 (4)	47 (63)
	Rainfall Zone—VIII		..		..	*Rainfall Pattern*—E_4 (B_2 C_1 E_1) E_4			
Udaipur									
Salumbar	108,855	116	6 (6)	28 (30)	17 (18·4)	9 (11)	— (—)	7 (7)	25 (27)
Sarada	113,363	104	— (—)	59 (54)	12 (12)	9 (9)	— (—)	7 (6)	21 (19)
Lasadia	94,657	66	58 (40·5)	51 (35)	6 (4)	5 (3)	— (—)	5 (4)	19 (13)
Dungarpur									
Aspur	96,536	140	5 (8)	17 (24)	7 (10·4)	17 (24)	— (—)	3 (4)	20 (29)
Sagwara	171,675	132	38 (29)	25 (18)	11 (8)	13 (10)	1 (1)	5 (5)	37 (29·6)
Dungapur	262,020	147	24 (14)	52 (29)	16 (9)	15 (8)	— (—)	13 (7)	59 (33
Banswara									
Garhi	115,930	164	10 (14)	10 (14)	5 (7)	8 (11)	— (—)	9 (13)	29 (41)

APPENDIX 1 (*Contd.*)

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	total	per sq km							
	Rainfall Zone—VIII (contd.)			..	..	*Rainfall Pattern*—$(E_4\ (B_2\ C_1E_1)\ E_4$			
Bagidora	129,373	151	2 (2)	22 (26)	1 (1)	7 (9)	— (—)	10 (12)	43 (50)
Chittaurgarh									
Chittaurgarh	99,140	143	3 (6)	14 (18)	24 (32·4)	7 (10)	— (—)	2 (3)	20 (31)
Kapasan	110,089	121	·1 (·1)	8 (10)	34 (36)	11 (12)	— (—)	5 (6)	34 (36)
Bhadesar	59,501	110	2 (4)	8 (14·4)	19 (34)	6 (11)	— (—)	2 (4)	17 (33)
Nimbahera	84,708	102	3 (8)	15 (18)	20 (21)	8 (9)	— (—)	3 (3)	34 (41)
Dungla	53,298	108	— (—)	4 (8)	13 (25)	6 (12)	— (—)	2 (4)	24 (51)
Bari Sadri	61,265	131	3 (6)	7 (16)	9 (18. 5)	4 (9)	— (—)	1 (3)	22 (47)
Chhoti Sadri	63,031	89	8 (13)	16 (23)	13 (17)	6 (8)	— (—)	2 (2)	26 (37)
Udaipur									
Vallabhnagar	131,009	127	·1 (·1)	22 (21)	23 (22)	14 (13)	— (—)	7 (7)	38 (37)
Kota									
Ladpura	284,834	185	65 (42·4)	28 (18)	15 (10)	4 (2)	·3 (·2)	2 (1)	40 (26)
Digod	75,887	83	1 (1)	16 (17·5)	5 (6)	3 (4)	— (—)	3 (3)	63 (69)
Bundi									
Bundi	161,049	84	3 (2)	95 (49)	7 (4)	9 (5)	·1 (·1)	9 (5)	70 (35·4)
Bharatpur									
Rupbas	105,649	192	1 (1)	6 (10)	·4 (1)	2 (3)	— (—)	2 (3)	45 (82)
Baseri	94,828	95	3 (3)	47 (47)	8 (8)	9 (9)	— (—)	4 (4)	28 (29)
Bari	94,206	116	1 (1)	34 (42)	5 (6)	7 (9)	— (—)	4 (5)	30 (37)
Raja Khera	69,712	180	0·4 (1)	8 (22)	1 (3)	2 (6)	— (—)	1 (3)	25 (65)
Dholpur	200,909	248	0·1 (—)	11 (14)	3 (3)	6 (7)	0·3 (.2)	4 (5)	57 (71)
Sawai Madhopur									
Hindaun	140,265	219	2 (3)	8 (12)	2 (3)	10 (16)	— (—)	2 (3)	40 (63)
Karauli	160,901	88	62 (34)	50 (27)	9 (5)	15 (8)	— (—)	5 (3)	41 (23)
Sapotra	85,329	61	50 (36)	47 (33)	4 (3)	8 (6)	— (—)	2 (1)	30 (21)
Bharatpur									
Bayana .	111,884	139	15 (19)	16 (20)	2 (2)	5 (6)	1 (1)	3 (4)	38 (48)
Kota									
Pipalda	97,753	87	·2 (·2)	27 (24)	9 (8)	2 (2)	— (—)	4 (4)	70 (62)
Ramganj Mandi	89,517	113	4 (5)	18 (22·6)	10 (13)	4 (5)	— (—)	2 (2)	42 (53)

APPENDIX 1 (*Contd.*)

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	total	per sq. km							
	Rainfall Zone—VIII (concld.)			..	..	*Rainfall Pattern*—E_4 (B_2 C_1 E_1) E_4			
Bundi									
Nainwa	82,175	72	16 (14)	21 (18)	10 (9)	7 (5·5)	·2 (.2)	8 (6)	53 (47)
Keshoraipatan	108,629	92	2 (1)	28 (24)	2 (2)	6 (5)	·1 (·1)	9 (8)	71 (60·)
Jhalawar									
Pachpahar	74,424	105	3 (4)	11 (16)	8 (11)	5 (7)	— (—)	4 (5)	40 (57)
Sawai Madhopur									
Khandar	55,159	57	23 (24)	27 (28)	8 (8)	5 (6)	— (—)	2 (2)	31 (32)
Chittaurgarh									
Pratapgarh	167,652	77	31 (·3)	57 (26)	50 (23)	13 (6)	— (—)	5 (3)	90 (42)
Bharatpur									
Bharatpur	256,008	268	3 (3)	8 (7)	2 (1)	1 (1)	— (—)	4 (4)	79 (84)
Deeg	103,957	207	1 (2)	5 (10)	1 (1)	1 (2)	— (—)	1 (3)	41 (82)
	Rainfall Zone—IX		..	..		*Rainfall Pattern*—E_4 (A_1 B_1 C_1 E_1) E_4			
Kota									
Mangrol	98,244	100	1 (1)	14 (14·4)	8 (8)	4 (4)	— (—)	3 (3)	68 (69)
Baran	84,422	134	·3 (1)	5 (8)	3 (4)	5 (8)	— (—)	1 (2)	49 (77)
Sangod	93,802	79	10 (8)	24 (20)	13 (11)	5 (4)	·1 (·1)	2 (2)	66 (55)
Shahbad	48,400	33	50 (34)	12 (8·5)	45 (31)	8 (5)	— (—)	7 (5)	24 (17)
	Rainfall Zone—X		..	..	..	*Rainfall Pattern*—E_4 (A_2 C_1 E_1) E_4			
Kota									
Kishanganj	60,767	43	60 (42)	12 (9)	22 (15)	7 (5)	— (—)	5 (3)	37 (26)
Atru	70,745	83	13 (15·5)	9 (11)	6 (7)	6 (7)	— (—)	1 (2)	50 (58)
Chhabra	64,001	80	14 (18)	11 (13)	9 (11)	5 (6)	·2 (·3)	2 (2)	39 (49)
Chhipabarod	75,498	91	11 (13)	23 (27)	9 (10·4)	6 (7)	— (—)	1 (2)	33 (40)
Jhalawar									
Khanpur	87,103	92	5 (6)	19 (20)	4 (4)	9 (10)	— (—)	3 (3)	54 (57)
Jhalrapatan	140,980	122	16 (14)	24 (21)	15 (13)	9 (8)	— (—)	3 (2)	50 (42·5)
Aklera	135,155	95	9 (6)	33 (23)	27 (19)	16 (11)	— (—)	3 (2)	54 (38·5)
Pirawa	103,174	99	13 (3)	9 (9)	21 (20)	8 (8)	·3 (3)	2 (2)	60 (58)
Gangdhar	81,165	89	5 (6)	21 (23)	20 (21)	8 (9)	— (—)	2 (2)	36 (39)
Sawai Madhopur									
Sawai Madhopur	177,027	108	29 (17·5)	21 (13)	12 (7)	15 (9)	— (—)	4 (3)	84 (51)

APPENDIX 1 (*Concld.*)

(thousand hectares)

District/taluk	population 1971		forests	nac	cw	pp&gl	mtc&g	fallow lands	net area sown
	total	per sq km							
	Rainfall Zone—X (concld.)			..	..	*Rainfall Pattern—E_4 (A_2 C_1 E_1) E_4*			
Banswara									
Ghatol	132,085	101	29 (22)	31 (23·5)	7 (4)	4 (3)	— (—)	24 (18)	39 (30)
Banswara	153,951	134	21 (18)	17 (15)	11 (9)	4 (3)	— (—)	15 (14)	47 (41)
Kushalgarh	123,247	118	19 (18)	16 (15)	1 (1)	14 (13)	— (—)	11 (11)	43 (41·5)
	Rainfall Zone—XI		..	..	..	*Rainfall Pattern—E_4(A_1 B_1 E_2) E_4*			
Sirohi									
Abu-Raed	84,124	94	1 (1)	68 (74·4)	1 (2)	2 (2)	— (—)	4 (4)	14 (16)

APPENDIX 2

Talukwise Livestock Statistics—1966

RAJASTHAN

(thousands)

District	Cattle			Buffaloes			Sheep	Goats	Horses and ponies	Mules	Donkeys	Camels	Pigs	Total live-stock
	m	f	ys	m	f	ys								
	Rainfall Zone—I			..		..			..		*Rainfall Pattern—E_4 (D_2 E_2) E_4*			
Jaisalmer														
Jaisalmer	25 (4)	113 (17)	58 (9)	0·3 (—)	0·3 (—)	0·2 (—)	328 (48)	106 (16)	1 (0·1)	— (—)	13 (2)	25 (4)	— (—)	670
Pokaran	24 (5)	78 (15)	46 (9)	— (—)	0·3 (—)	0·2 (—)	263 (49)	98 (18)	0·3 (—)	— (—)	3 (1)	16 (3)	— (—)	529
Barmer														
Pachpadra	24 (9)	36 (14)	25 (9)	0·1 (—)	4 (2)	2 (1)	72 (27)	88 (34)	0·1 (0·1)	— (—)	1 (1)	7 (3)	— (—)	261
Sheo	14 (5)	58 (22)	35 (13)	0·2 (—)	0·2 (—)	0·1 (—)	82 (30)	68 (25)	1 (0·2)	— (—)	6 (2)	6 (2)	— (—)	271
Jodhpur														
Shergarh	23 (7)	38 (13)	25 (8)	1 (0·3)	5 (2)	3 (1)	93 (31)	104 (34)	0·2 (—)	— (—)	1 (0·4)	11 (4)	— (—)	305
Bikaner														
Kolavat	13 (4)	48 (15)	36 (11)	— (—)	1 (0·4)	1 (0·2)	170 (54)	36 (11)	— (—)	— (—)	1 (0·4)	10 (3)	— (—)	315
Jodhpur														
Phalodi	27 (7)	75 (18)	55 (13)	0·2 (—)	2 (1)	2 (0·4)	171 (41)	66 (16)	0·1 (—)	— (—)	1 (0·3)	17 (4)	— (—)	417
Bikaner														
Bikaner	8 (2)	49 (13)	39 (10)	0·3 (0·1)	7 (2)	5 (1)	218 (56)	47 (12)	0·3 (0·1)	— (—)	2 (0·4)	11 (3)	— (—)	387
Nokha	10 (5)	31 (15)	26 (12)	0·3 (0·2)	10 (5)	9 (4)	74 (36)	35 (17)	— (—)	— (—)	1 (0·3)	12 (6)	— —	209
Churu														
Sardar Shahar	2 (1)	33 (17)	26 (14)	1 (—)	18 (9)	15 (8)	60 (31)	23 (12)	— (—)	— (—)	0·4 (0·2)	15 (8)	— (—)	193
Dungargarh	4 (3)	18 (14)	15 (12)	1 (1)	14 (11)	11 (9)	41 (33)	13 (10)	— (—)	— (—)	1 (1)	8 (6)	— (—)	126
Bikaner														
Lunkaransar	2 (1)	54 (26)	39 (19)	0·4 (0·2)	7 (3)	4 (2)	72 (35)	15 (7)	— (—)	— (—)	1·3 (0·3)	15 (7)	— (—)	208

m= male
f= female

—= nil or negligible
ys= youngstock

NOTE : Figures in brackets represent percentages to total livestock population.

APPENDIX 2 (*Contd.*)

(thousands)

District	Cattle			Buffaloes			Sheep	Goats	Horses and ponies	Mules	Donkeys	Camels	Pigs	Total live-stock
	m	f	ys	m	f	ys								
	Rainfall Zone—I (contd.) ..						..		..		*Rainfall Pattern—E_4 (D_2 E_2) E_4*			
Ganganagar														
Karanpur	13 (15)	6 (7)	7 (8)	0·3 (0·3)	11 (12)	9 (11)	14 (16)	23 (26)	0·3 (0·3)	— (—)	0·3 (0·3)	3 (3)	0·1 (0·1)	87
Ganganagar	16 (13)	13 (11)	13 (11)	0·1 (—)	14 (11)	13 (11)	20 (17)	27 (22	1 (1)	— (—)	0·4 (0·4)	0·2 (0·2)	— (—)	122
Padampur	9 (10)	9 (10)	9 (10)	0·2 (0·2)	10 (11)	10 (11)	15 (17)	21 (24)	0·2 (0·2)	— (—)	0·2 (0·3)	5 (6)	— (—)	88
Raisinghnagar	9 (10)	9 (10)	9 (10)	0·1 (0·1)	8 (10)	8 (9)	17 (19)	22 (25)	0·2 (0·3)	— (—)	0·2 (0·3)	5 (6)	— (—)	89
Anupgarh	10 (10)	11 (11)	10 (10)	0·2 (0·2)	6 (6)	5 (5)	41 (41)	14 (14)	— (—)	— (—)	0·3 (0·3)	3 (3)	— (—)	100
Sangaria	3 (5)	7 (12)	7 (13)	— (—)	6 (11)	6 (11)	10 (19)	10 (18)	0·2 (0·3)	— (—)	0·3 (0·3)	5 (10)	— (—)	54
Hanumangarh	5 (7)	11 (14)	10 (13)	— (—)	8 (10)	7 (8)	15 (18)	15 (18)	0·3 (0·3)	— (—)	1 (1)	8 (10)	— (—)	80
Tibi	4 (7)	7 (12)	7 (12)	— (—)	6 (10)	6 (10)	10 (18)	11 (19)	0·2 (0·2)	— (—)	0·3 (1)	5 (10)	— (—)	56
Nohar	2 (1)	31 (14)	4 (1)	0·2 (0·1)	11 (5)	10 (5)	96 (43)	43 (19)	0·2 (0·1)	— (—)	2 (1)	25 (11)	— (—)	224
Sadulshahar	3 (6)	7 (13)	7 (13)	— (—)	5 (9)	5 (9)	12 (22)	10 (19)	— (—)	— (—)	0·2 (0·4)	5 (9)	— (—)	54
Suratgarh	6 (3)	29 (17)	25 (15)	0·2 (0·1)	8 (5)	7 (4)	53 (31)	26 (15)	0·1 (0·1)	— (—)	2 (1)	15 (9)	— (—)	171
	Rainfall Zone—II ..						..		..		*Rainfall Pattern—E_4 (C_1 D_1 E_2) E_4*			
Barmer														
Chohtan	12 (2)	50 (10)	38 (8)	2 (0·4)	1 (0·2)	1 (0·2)	144 (30)	210 (43)	1 (0·2)	— (—)	7 (1)	23 (5)	— (—)	488
Barmer	51 (4)	135 (10)	96 (7)	1 (—)	4 (0·3)	3 (0·2)	433 (31)	601 (43)	1 (—)	— (—)	10 (1)	49 (4)	— (—)	1385
	Rainfall Zone—III ..						..		..		*Rainfall Pattern—E_4 (C_2 D_1 E_1) E_4*			
Jodhpur														
Jodhpur	32 (10)	55 (17)	51 (16)	0·2 (—)	8 (3)	6 (2)	93 (30)	60 (19)	0·4 (0·1)	— (—)	1 (0·3)	7 (2)	— (—)	314
Barmer														
Siwana	21 (10)	21 (10)	20 (9)	0·1 (—)	5 (2)	3 (1)	61 (28)	80 (37)	0·2 (—)	— (—)	1 (0·3)	4 (2)	— (—)	216
Jalor														
Jalor	39 (10)	25 (6)	35 (9)	0·4 (0·1)	12 (3)	10 (3)	147 (37)	117 (30)	1 (0·2)	— (—)	2 (0·4)	5 (1)	— (—)	393

Jaswantpura (Bhinmal)	54 (12)	41 (9)	43 (9)	0·4 (0·1)	18 (4)	14 (3)	167 (35)	121 (26)	1 (0·2)	— (—)	2 (0·4)	6 (1)	— (—)	467
Sanchore	33 (11)	38 (13)	33 (11)	— (—)	13 (4)	9 (3)	100 (34)	61 (21)	1 (0·4)	— (—)	1 (0·4)	6 (2)	— (—)	295
Ahore	31 (12)	21 (8)	22 (8)	1 (0·2)	8 (2)	7 (3)	102 (41)	57 (23)	0·2 (0·1)	— (—)	1 (0·3)	2 (1)	— (—)	252
Jhunjhunu														
Khetri	8 (4)	18 (9)	20 (10)	0·4 (0·2)	15 (7)	18 (9)	43 (21)	73 (35)	— (—)	— (—)	1 (0·3)	9 (4)	·2 (0·1)	206
Udaipurwati	10 (4)	20 (9)	21 (9)	1 (0·4)	13 (6)	15 (7)	48 (21)	90 (39)	— (—)	— (—)	1 (0·4)	8 (3)	0·4 (·2)	230
Jhunjhunu	1 (0·3)	20 (11)	20 (11)	1 (1)	6 (3)	8 (4)	42 (23)	70 (39)	— (—)	— (—)	0·4 (0·2)	12 (7)	— (—)	181
Sikar														
Neem-ka-Thana	15 (8)	15 (8)	15 (9)	0·3 (0·2)	15 (8)	15 (8)	37 (20)	62 (35)	0·1 (0·1)	— (—)	2 (1)	3 (2)	0·3 (0·2)	180
Danta Ramgarh	17 (8)	26 (13)	24 (12)	2 (1)	9 (4)	10 (4)	63 (30)	52 (25)	0·1 (0·1)	— (—)	1 (1)	4 (2)	0·2 (0·1)	210
Sikar	6 (3)	23 (10)	23 (10)	3 (1)	10 (5)	11 (5)	62 (28)	73 (33)	0·2 (0·1)	— (—)	1 (0·2)	8 (4)	— (—)	219
Lachhmangarh	3 (2)	17 (9)	19 (10)	2 (1)	5 (3)	7 (4)	54 (30)	66 (36)	— (—)	— (—)	0·3 (0·2)	8 (5)	— (—)	182
Fatehpur	1 (1)	13 (9)	13 (9)	1 (1)	3 (2)	4 (3)	47 (32)	54 (37)	0·1 (0·1)	— (—)	0·4 (0·3)	9 (6)	— (—)	146
Nagaur														
Ladnu	6 (4)	20 (15)	18 (13)	2 (1)	4 (3)	4 (3)	41 (29)	39 (28)	0·1 (0·1)	— (—)	0·2 (0·1)	5 (4)	— (—)	139
Didwana	9 (5)	27 (16)	20 (11)	3 (2)	5 (3)	5 (3)	52 (30)	49 (28)	— (—)	— (—)	0·2 (0·1)	5 (4)	— (—)	176
Nawa	15 (9)	25 (15)	20 (12)	2 (1)	7 (4)	7 (4)	47 (27)	44 (25)	0·1 (0·1)	— (—)	1 (1)	3 (2)	— (—)	172
Parbatsar	21 (7)	48 (15)	34 (11)	5 (2)	10 (3)	9 (3)	100 (32)	79 (25)	0·2 (0·1)	— (—)	1 (0·3)	6 (2)	— (—)	314
Degana	22 (8)	37 (16)	29 (12)	1 (0·4)	8 (3)	8 (3)	76 (32)	54 (23)	0·2 (0·1)	— (—)	1 (0·2)	4 (1)	— (—)	240
Jayal	16 (9)	28 (15)	24 (13)	0·4 (0·3)	6 (3)	6 (3)	59 (32)	41 (22)	— (—)	— (—)	0·1 (0·1)	4 (2)	— (—)	185
Jodhpur														
Osian	33 (8)	43 (12)	30 (9)	1·4 (0·1)	4 (1)	3 (1)	142 (40)	90 (25)	— (—)	— (—)	1 (0·2)	7 (2)	— (—)	354
Jhunjhunu														
Chirawa	1 (0·4)	18 (11)	20 (12)	1 (0·3)	9 (5)	12 (7)	43 (26)	52 (31)	0·1 (—)	— (—)	0·4 (0·3)	13 (7)	— (—)	170
Churu														
Sujangarh	8 (3)	25 (11)	22 (10)	2 (1)	9 (4)	8 (3)	82 (35)	66 (29)	0·2 (0·1)	— (—)	1 (0·2)	10 (4)	— (—)	233
Nagaur														
Nagaur	29 (9)	41 (12)	34 (10)	1 (0·1)	9 (2)	8 (2)	119 (35)	97 28	0·1 (—)	— (—)	1 (0·2)	7 (2)	— (—)	345

APPENDIX 2 (*Contd.*)

(thousands)

District	Cattle m	Cattle f	Cattle ys	Buffaloes m	Buffaloes f	Buffaloes ys	Sheep	Goats	Horses and ponies	Mules	Donkeys	Camels	Pigs	Total live-stock
	Rainfall Zone—III (concld.)										*Rainfall Pattern—E_4 (C_2 D_1 E_1) E_4*			
Jodhpur														
• Bilara	43 (12)	42 (1)	36 (10)	0·4 (0·1)	11 (3)	10 (3)	164 (45)	56 (14)	0·3 (0·1)	— (—)	1 (0·2)	3 (1)	— (—)	366
Churu														
Rajgarh	0·3 (0·1)	22 (11)	22 (11)	0·2 (0·1)	7 (4)	9 (5)	45 (24)	66 (34)	— (—)	— (—)	0·3 (0·2)	20 (11)	— (—)	193
Pali														
Jaitaran	21 (11)	24 (12)	21 (11)	2 (1)	6 (3)	7 (3)	77 (39)	39 (19)	0·2 (0·1)	— (—)	1 (0·4)	1 (0·4)	·3 (0·1)	100
Sojat	24 (9)	29 (11)	26 (10)	2 (1)	8 (3)	8 (3)	100 (40)	53 (21)	0·2 (0·1)	— (—)	1 (0·4)	3 (1)	— (—)	253
Pali	43 (11)	41 (10)	43 (11)	1 (0·1)	11 (3)	10 (3)	150 (40)	77 (20)	1 (0·1)	— (—)	1 (0·3)	2 (1)	— (—)	381
Nagaur														
Merta	26 (11)	33 (14)	27 (11)	0·2 (0·1)	9 (4)	8 (3)	95 (39)	41 (17)	— (—)	— (—)	1 (0·2)	1 (0·3)	— (—)	242
Pali														
Raipur	16 (8)	15 (8)	14 (7)	3 (2)	5 (3)	5 (3)	70 (38)	58 (31)	— (—)	— (—)	1 (0·4)	1 (0·4)	— (—)	1 87
Ganganagar														
Bhadra	1 (1)	12 (10)	13 (11)	0·1 (0·1)	8 (7)	10 (9)	31 (27)	27 (23)	0·2 (0·2)	— (—)	1 (1)	14 (12)	— (—)	117
Sikar														
Srimadhopur	24 (10)	26 (10)	28 (11)	1 (0·3)	15 (6)	18 (7)	61 (24)	73 (28)	1 (0·2)	— (—)	2 (1)	4 (2)	1 (0·2)	254
Churu														
Ratangarh	2 (1)	15 (9)	14 (8)	1 (1)	7 (4)	6 (4)	73 (45)	35 (22)	0·1 (0·1)	— (—)	1 (0·3)	9 (5)	— (—)	163
Churu	1 (·4)	16 (13)	12 (8)	0·3 (0·2)	5 (4)	6 (5)	32 (26)	38 (31)	— (—)	— (—)	0·3 (0·3)	11 (9)	— (—)	122
Taranagar	0·3 (0·2)	17 (15)	13 (12)	0·1 (0·1)	6 (5)	6 (5)	28 (25)	29 (25)	— (—)	— (—)	0·3 (0·3)	13 (12)	— (—)	113
Pali														
Kharchi	2 (1)	22 (9)	21 (9)	6 (2)	8 (3)	8 (3)	87 (36)	62 (26)	0·2 (—)	— (—)	2 (1)	4 (2)	0·1 (—)	241
Sirohi														
Sheoganj	13 (10)	13 (10)	14 (10)	1 (1)	5 (4)	4 (3)	34 (26)	45 (34)	0·1 (0·1)	— (—)	0·4 (0·3)	1 (1)	— (—)	131

Udaipur														
Bhim	17 (8)	17 (8)	15 (8)	0·4 (0·2)	6 (3)	6 (3)	42 (21)	93 (47)	0·1 (0·1)	— (—)	0·4 (0·2)	0·3 (0·1)	— (—)	197
Deogarh	11 (8)	15 (11)	13 (9)	0·2 (0·2)	6 (5)	6 (4)	39 (23)	53 (39)	0·2 (0·1)	— (—)	1 (1)	— (—)	— (—)	137
Amet	13 (11)	14 (11)	13 (11)	0·3 (0·2)	8 (6)	7 (6)	27 (22)	40 (32)	0·2 (0·2)	— (—)	1 (1)	0·1 (0·1)	0·2 (0·2)	123
Rajsamand	19 (13)	15 (11)	16 (12)	0·4 (0·2)	9 (6)	9 (6)	33 (23)	38 (27)	0·2 (0·2)	— (—)	1 (1)	0·1 (0·1)	— (—)	142
Bhilwara														
Raipur								na						
Asind	26 (9)	32 (11)	21 (7)	1 (0·3)	13 (5)	10 (4)	103 (36)	76 (26)	0·4 (0·1)	— (—)	1 (0·3)	2 (1)	1 (0·3)	288
Mandal	26 (9)	34 (12)	24 (9)	1 (0·4)	15 (5)	13 (5)	86 (31)	76 (27)	1 (0·2)	— (—)	1 (0·3)	3 (1)	0·4 (0·1)	281
Hurda	12 (10)	16 (12)	12 (10)	0·3 (0·3)	1 (1)	1 (1)	12 (10)	48 (39)	21 (16)	— (—)	0·1 (0·4)	0·4 (0·4)	0·3 (0·2)	123
Ajmer														
Beawar	31 (9)	35 (10)	26 (7)	1 (0·2)	14 (4)	12 (3)	113 (31)	136 (35)	0·2 (—)	— (—)	1 (0·3)	1 (0·3)	1 (0·2)	361
Jaipur														
Kotputli	13 (10)	13 (9)	11 (8)	0·2 (0·4)	13 (10)	13 (9)	35 (25)	36 (25)	2 (1)	— (—)	— (—)	2 (2)	0·4 (0·3)	140
Bairath	18 (12)	13 (9)	10 (7)	0·2 (0·1)	12 (8)	11 (7)	24 (16)	58 (39)	— (—)	— (—)	1 (1)	1 (1)	0·3 (0·2)	150
Ambar	28 (14)	29 (14)	22 (11)	1 (0·4)	21 (11)	21 (11)	32 (17)	42 (21)	0·3 (0·1)	— (—)	1 (0·4)	2 (1)	1 (3)	195
Jamwa Ramgarh	29 (12)	27 (11)	22 (8)	0·3 (0·1)	16 (7)	14 (6)	32 (13)	105 (42)	0·2 (0·1)	— (—)	1 (0·3)	1 (0·3)	1 (0·3)	247
Phulera	27 (11)	34 (14)	27 (11)	1 (0·4)	14 (5)	15 (6)	74 (30)	50 (20)	0·1 (—)	— (—)	1 (1)	2 (1)	1 (0·4)	247
Jaipur	9 (11)	15 (19)	11 (14)	0·3 (0·4)	9 (12)	10 (13)	7 (9)	16 (20)	0·3 (0·4)	— (—)	0·3 (0·4)	0·4 (1)	0·3 (0·4)	79
Sanganer	19 (16)	19 (16)	14 (11)	0·3 (0·2)	10 (8)	10 (8)	15 (12)	31 (26)	0·1 (0·1)	— (—)	1 (1)	1 (1)	0·1 (0·3)	120
Ajmer														
Ajmer	35 (9)	47 (12)	41 (10)	1 (0·2)	23 (5)	21 (5)	121 (30)	109 (27)	0·3 (—)	— (—)	2 (1)	(1)	2 (0·3)	402
Jaipur														
Chaksu	21 (15)	21 (15)	16 (11)	0·3 (0·2)	8 (6)	8 (6)	22 (16)	42 (30)	0·1 (0·1)	— (—)	1 (0·4)	0·3 (0·2)	1 (0·4)	140
Phagi	20 (12)	18 (11)	17 (11)	0·3 (0·2)	12 (8)	14 (9)	34 (21)	43 (27)	0·1 (0·1)	— (—)	0·3 (0·2)	0·4 (0·2)	1 (0·4)	160
Dudu	20 (12)	20 (12)	19 (11)	1 (0·4)	13 (8)	16 (9)	39 (23)	39 (23)	0·1 (0·1)	— (—)	0·3 (0·2)	1 (0·4)	0·4 (0·3)	169
Ajmer														
Kishangarh	20 (9)	23 (10)	22 (10)	1 (0·4)	14 (7)	16 (8)	62 (29)	54 (25)	0·2 (—)	— (—)	1 (0·2)	1 (0·4)	1 (0·4)	214

APPENDIX 2 (*Contd.*)

(Thousands)

District	Cattle			Buffaloes			Sheep	Goats[1]	Horses and ponies	Mules	Donkeys	Camels	Pigs	Total live-stock
	m	f	ys	m	f	ys								
	Rainfall Zone—IV (concld.)										*Rainfall Pattern—E_4 (C_2 D_2) E_4*			
Sarwar	17 (10)	20 (12)	17 (10)	0·4 (0·2)	10 (6)	11 (6)	60 (35)	33 (20)	0·1 (—)	— (—)	0·3 (0·2)	0·2 (—)	0·4 (0·3)	168
Tonk														
Malpura	24 (11)	24 (11)	24 (11)	0·4 (0·2)	16 (8)	18 (9)	53 (26)	46 (22)	0·2 (—)	— (—)	0·4 (0·2)	0·2 (0·1)	1 (1)	207
Alwar														
Behror	9 (8)	11 (10)	12 (11)	— (—)	12 (11)	14 (13)	15 (14)	30 (27)	0·1 (0·1)	0·4 (0·4)	— (—)	1 (1)	5 (5)	110
Mandawar	10 (12)	11 (13)	11 (13)	0·3 (0·3)	9 (11)	11 (13)	8 (9)	20 (24)	0·2 (0·3)	0·3 (0·3)	— (—)	1 (1)	3 (3)	85
Kishangarh	16 (14)	14 (11)	13 (11)	0·4 (0·4)	13 (11)	13 (11)	9 (7)	37 (31)	0·3 (0·3)	0·4 (0·4)	— (—)	1 (1)	2 (2)	120
Tijara	13 (13)	13 (12)	10 (9)	1 (1)	9 (9)	9 (8)	6 (6)	40 (38)	0·3 (0·3)	0·4 (0·4)	— (—)	1 (1)	2 (2)	104
Swaimadhopur														
Todabhim	18 (16)	12 (11)	8 (6)	0·1 (0·1)	17 (16)	12 (11)	11 (10)	29 (26)	0·2 (0·2)	2 (2)	— (—)	0·2 (0·2)	1 (1)	109
Alwar														
Bansur	10 (8)	13 (11)	12 (10)	0·4 (0·4)	9 (6)	10 (8)	23 (19)	40 (34)	— (—)	4 (2)	— (—)	2 (1)	1 (0·4)	121
Thanagazi	14 (9)	15 (10)	13 (8)	0·4 (0·2)	12 (8)	10 (6)	12 (8)	74 (48)	— (—)	0·3 (0·2)	— (—)	1 (1)	1 (1)	153
	Rainfall Zone—V										*Rainfall Pattern—E_4 (C_3 D_1) E_4*			
Jaipur														
Bassi	21 (17)	17 (13)	14 (11)	1 (0·3)	10 (8)	9 (7)	17 (13)	34 (27)	0·2 (0·1)	— (—)	1 (1)	1 (1)	1 (1)	126
Dausa	28 (16)	25 (15)	21 (12)	0·3 (0·2)	15 (9)	15 (9)	24 (12)	43 (25)	— (—)	— (—)	1 (0·4)	1 (0·2)	1 (1)	168
Baswa	18 (14)	19 (11)	12 (9)	0·4 (0·3)	15 (12)	12 (9)	9 (8)	44 (34)	0·2 (0·1)	— (—)	2 (1)	0·4 (1)	1 (0·3)	128
Sikari	18 (16)	12 (11)	9 (8)	0·1 (0·1)	14 (13)	12 (11)	8 (7)	34 (31)	0·1 (0·1)	— (—)	1 (1)	0·4 (0·3)	1 (1)	109
Bharatpur														
Weir	17 (15)	11 (10)	9 (8)	1 (0·4)	17 (15)	16 (13)	10 (9)	31 (27)	0·2 (0·2)	— (—)	2 (1)	0·4 (0·3)	2 (1)	114
Sawaimadhopur	15 (15)	11 (11)	8 (8)	0·3 (0·3)	15 (15)	11 (11)	14 (14)	22 (22)	0·1 (0·1)	2 (2)	— (—)	0·3 (0·3)	1 (1)	99

Nadauti	13 (14)	12 (13)	9 (10)	— (—)	9 (10)	7 (8)	7 (8)	30 (33)	0·1 (0·1)	1 (1)	— (—)	0·3 (0·3)	1 (1)	92
Alwar														
Lachhmangarh	36 (17)	22 (10)	17 (8)	5 (2)	30 (14)	24 (11)	24 (11)	51 (24)	0·3 (0·2)	4 (2)	— (—)	1 (1)	1 (0·4)	21
Alwar	32 (14)	27 (11)	22 (9)	3 (1)	26 (10)	22 (9)	13 (6)	84 (36)	0·3 (0·1	4 (2)	— (—)	2 (1)	1 (0·4)	235 (—)
Bharatpur														
Kaman	24 (20)	12 (10)	10 (8)	2 (2)	16 (14)	13 (11)	9 (8)	28 (23)	0·4 (0·4)	— (—)	1 (1)	1 (0·4)	3	119
Nagar	16 (19)	9 (10)	7 (8)	2 (2)	12 (14)	9 (10)	10 (11)	18 (22)	0·3 (0·3)	— (—)	1 (1)	0·2 (0·3)	2 (2)	84
Nadbai	14 (19)	8 (11)	7 (10)	2 (3)	12 (17)	10 (15)	5 (7)	10 (15)	0·1 (0·1	— (—)	1 (1)	0·1 (0·1)	1 (1)	71
Alwar														
Rajgarh	22 (11)	21 (10)	18 (9)	2 (1)	18 (9)	14 (7)	9 (4)	94 (46)	— (—)	2 (1)	— (—)	1 (1)	1 0·4)	203

Rainfall Zone—VI *Rainfall Pattern—E_4 (1) B_1 C_1 E_2 E_4*

Udaipur														
Kotra	20 (13)	26 (16)	27 (17)	2·0 (0·1)	10 (6)	8 (5)	5 (3)	63 (39)	0·3 (0·2)	— (—)	0·2 (0·1)	0·1 (—)	— (—)	161
Kumbhalgarh	18 (13)	14 (9)	15 (10)	0·4 (0·3)	20 (14)	17 (12)	18 (13)	39 (27)	0·1 (0·1)	— (—)	1 (0·4)	1 (1)	— (—)	144
Gogunda	20 (15)	22 (16)	22 (16)	1 (0·4)	16 (12)	12 (8)	13 (9)	30 (22)	0·3 (0·2)	— (—)	0·4 (0·3)	1 (0·4)	— (—)	137
Girwa	39 (13)	42 (14)	46 (15)	1 (0·3)	23 (8)	18 (6)	17 (5)	112 (37)	1 (0·3)	— (—)	1 (0·4)	2 (1)	— (—)	302
Mavli	31 (15)	25 (12)	23 (11)	0·4 (0·2)	14 (7)	11 (6)	34 (17)	61 (30)	0·3 (0·2)	— (—)	1 (0·4)	2 (1)	— (—)	203
Phalasia	30 (16)	31 (17)	30 (16)	1 (0·2)	11 (6)	8 (5)	11 (6)	61 (33)	0·4 (0·3)	— (—)	1 (0·4)	— (—)	— (—)	183
Nathdwara	25 (13)	23 (12)	23 (12)	1 (0·3)	16 (8)	12 (6)	32 (16)	59 (31)	0·2 (0·1)	— (—)	1 (0·4)	1 (0·4)	— (—)	194
Kherwara	30 (16)	24 (13)	20 (11)	0·3 (0·1)	17 (9)	13 (7)	20 (11)	64 (34)	0·2 (0·1)	— (—)	0·3 (0·1)	0·2 (1)	— (—)	190
Sirohi														
Pindwara	20 (13)	13 (8)	21 (13)	0·2 (0·1)	8 (5)	6 (4)	25 (16)	55 (35)	0·1 (0·1)	— (—)	1 (0·3)	1 (1)	— (—)	158
Udaipur														
Railmagra	20 (14)	16 (12)	16 (12)	1 (1)	7 (6)	7 (6)	35 (27)	26 (20)	0·4 (0·4)	— (—)	1 (1)	0·2 (0·1)	0·2 (0·1)	130
Pali														
Desuri	29 (12)	22 (9)	27 (11)	1 (1)	10 (4)	10 (4)	68 (28)	71 (29)	0·2 (0·1)	— (—)	2 (1)	1 (0·4)	1 (0·3)	244
Bali	44 (11)	37 (9)	42 (11)	1 (0·2)	16 (4)	15 (4)	108 (28)	118 (30)	1 (0·2)	— (—)	2 (0·4)	2 (0·4)	0·4 (1)	387

APPENDIX 2 (*Contd.*)

(thousands)

District	Cattle			Buffaloes			Sheep	Goats	Horses & ponies	Mules	Donkeys	Camels	Pigs	Total live-stock
	m	f	ys	m	f	ys								
	Rainfall Zone—VI (concld.)				..		..		..		*Rainfall Pattern*— E_4 (B_1 C_1 E_2) E_4			
Sirohi														
Sirohi	13 (9)	16 (11)	20 (14)	1 (0·4)	5 (3)	4 (3)	37 (25)	50 (34)	0·1 (0·1)	— (—)	1 (0·4)	1 (0·4)	— (—)	148
Reodhar	21 (10)	18 (9)	24 (12)	1 (0·4)	10 (5)	9 (4)	56 (28)	60 (30)	0·2 (0·1)	— (—)	1 (0·4)	2 (1)	— (—)	202
	Rainfall Zone—VII				..		..		..		*Rainfall Pattern*—E_4 (B_2E_2)E_4			
Swaimadhopur														
Gangapur	16 (19)	13 (15)	10 (11)	— (—)	13 (14)	10 (12)	6 (7)	17 (19)	0·1 (0·1)	1 (1)	— (—)	0·2 (0·2)	1 (2)	88
Malarnachor	23 (16)	19 (13)	16 (10)	0·4 (0·2)	9 (6)	9 (6)	21 (15)	45 (31)	0·1 (0·1)	1 (1)	— (—)	0·4 (0·3)	2 (1)	145
Tonk														
Nawai	23 (13)	24 (14)	18 (12)	1 (0·3)	12 (7)	11 (7)	29 (18)	46 (28)	0·2 (0·1)	— (—)	0·4 (0·3)	0·1 (0·1)	1 (0·4)	165
Jaipur														
Lalsot	29 (18)	25 (15)	21 (12)	1 (0·4)	11 (7)	11 (7)	14 (8)	51 (31)	0·2 (0·1)	— (—)	1 (0·4)	1 (0·4)	2 (1)	167
Bhilwara														
Mandalgarh	34 (12)	40 (14)	39 (14)	1 (0·3)	15 (5)	14 (5)	51 (18)	85 (30)	1 (0·2)	— (—)	1 (0·2)	2 (1)	0·3 (0·1)	282
Banera	14 (9)	19 (12)	14 (9)	0·4 (0·2)	9 (6)	8 (5)	57 (37)	32 (21)	0·2 (0·1)	— (—)	0·4 (0·3)	1 (0·4)	0·2 (0·1	154
Kotri	23 (11)	28 (14)	22 (10)	1 (0·3)	12 (6)	11 (5)	60 (29)	49 (24)	0·2 (0·1)	— (—)	0·4 (0·2)	1 (0·3)	0·2 (0·1)	206
Bhilwara	27 (10)	29 (11)	28 (10)	1 (1)	14 (5)	14 (5)	84 (32)	52 (24)	0·4 (0·2)	— (—)	1 (0·4)	2 (1)	0·4 (0·2)	264
Sahara	31 (11)	31 (11)	30 (10)	1 (0·3)	15 (5)	16 (6)	82 (29)	72 (26)	1 (0·3)	— (—)	1 (0·4)	1 (0·4)	0·3 (0·1)	281
Bundi														
Hindoli	28 (13)	28 (13)	25 (12)	0·4 (0·2)	10 (5)	8 (4)	32 (15)	81 (37)	— (—)	0·3 (0·1)	1 (0·3)	1 (0·3)	1 (0·3)	215
Bhilwara														
Shahpura	24 (10)	29 (12)	24 (10)	1 (0·3)	10 (4)	10 (4)	106 (44)	38 (15)	0·2 (—)	— (—)	1 (0·3)	1 (0·3)	0·3 (0·1)	244
Jahazpur	29 (13)	30 (13)	26 (11)	1 (0·4)	10 (4)	9 (4)	59 (25)	68 (29)	0·3 (0·1)	— (—)	0·4 (0·2)	1 (0·2)	0·3 (0·1)	234

Chittaurgarh														
Rashmi	15 (14)	13 (11)	12 (11)	1 (1)	6 (6)	6 (6)	24 (22)	29 (27)	0·2 (0·3)	— (—)	1 (1)	0·4 (0·4)	0·2 (0·1)	108
Gangrar	24 (12)	26 (13)	25 (13)	0·4 (0·2)	10 (5)	9 (5)	34 (18)	61 (32)	0·4 (0·2)	— (—)	0·4 (0·2)	2 (1)	— (—)	191
Begun	35 (13)	45 (17)	45 (17)	0·4 (0·2)	18 (7)	18 (7)	21 (8)	77 (29)	0·4 (0·2)	— (—)	1 (0·3)	2 (1)	0·1 (—)	263
Tonk														
Tonk	30 (12)	32 (13)	24 (10)	1 (0·3)	18 (7)	16 (6)	72 (29)	54 (22)	0·2 (0·1)	— (—)	1 (0·3)	0·1 (—)	1 (0·3)	248
Uniara	22 (16)	17 (13)	16 (12)	0·4 (0·3)	8 (6)	7 (5)	18 (14)	42 (32)	0·2 (0·1)	— (—)	1 (0·4)	0·1 (0·1)	1 (1)	132
Todaraisingh	19 (11)	21 (13)	17 (10)	1 (0·3)	11 (6)	12 (7)	51 (31)	35 (21)	0·1 (0·1)	— (—)	0·2 (0·1)	— (—)	0·4 (0·3)	168
Deoli	26 (13)	28 (14)	23 (10)	1 (0·3)	11 (6)	11 (6)	52 (26)	48 (24)	0·2 (0·1)	— (—)	0·3 (0·1)	0·2 (0·1)	1 (0·3)	201
Ajmer														
Kekri	34 (10)	38 (11)	34 (10)	1 (0·3)	16 (5)	16 (5)	132 (40)	59 (18)	0·2 (—)	— (—)	1 (0·3)	1 (0·2)	1 (0·3)	332
Sawaimadhopur														
Bamanwas	19 (18)	16 (16)	12 (11)	0·1 (0·1)	10 (9)	9 (8)	7 (6)	30 (29)	0·1 (0·1)	1 (1)	— (—)	0·3 (0·2	1 (1)	103

Rainfall Zone—VIII *Rainfall Pattern—E_4 (B_2 C_1 E_1) E_4*

Udaipur														
Salumber	33 (15)	30 (14)	33 (15)	0·2 (0·1)	16 (8)	13 (6)	28 (13)	59 (28)	1 (0·3)	— (—)	1 (0·3)	2 (1)	— (—)	213
Sarada	30 (14)	28 (14)	29 (14)	0·1 (0·1)	16 (8)	12 (6)	21 (10)	64 (33)	1 (0·3)	— (—)	1 (0·4)	2 (1)	— (—)	206
Lasadia	24 (15)	24 (15)	23 (14)	0·3 (0·2)	11 (7)	8 (5)	5 (3)	65 (40)	1 (0·4)	— (—)	0·3 (0·2)	0·4 (0·2)	— (—)	161
Dungarpur]														
Dungarpur	76 (19)	49 (12)	43 (11)	0·4 (0·1)	30 (7)	21 (5)	52 (13)	133 (33)	1 (0·1)	— (—)	2 (0·4)	1 (0·1)	— (—)	408
Aspur	29 (17)	23 (13)	23 (13)	0·2 (0·1)	16 (9)	16 (9)	17 (10)	47 (27)	0·4 (0·3)	— (—)	1 (1)	1 (1)	— (—)	172
Sagwara	46 (20)	30 (13)	30 (13)	0·3 (0·1)	22 (9)	18 (8)	21 (8)	67 (28)	0·4 (0·2)	— (—)	2 (1)	0·2 (0·1)	—	238
Banswara														
Garhi	33 (20)	22 (14)	22 (14)	0·3 (0·2)	16 (10)	12 (8)	12 (8)	40 (25)	0·4 (0·2)	— (—)	2 (1)	1 (0·4)	— (—)	162
Bagidora	41 (23)	24 (14)	24 (14)	0·2 (0·1)	12 (7)	10 (5)	2 (1)	60 (34)	0·4 (0·3)	— (—)	3 (2)	1 (·1)	— (—)	177
Chittaurgarh														
Chittaurgarh	25 (16)	21 (14)	22 (14)	1 (1)	9 (6)	8 (5)	18 (12)	47 (31)	0·4 (0·2)	— (—)	1 (1)	1 (0·4)	0·2 (0·1)	152

APPENDIX 2 (*Contd.*)

(thousands)

District	Cattle			Buffaloes			Sheep	Goats	Horses & ponies	Mules	Donkeys	Camels	Pigs	Total Live-stock
	m	f	ys	m	f	ys								
	Rainfall Zone—VIII (concld)				..		..		..	*Rainfall Pattern—* $E_4(B_2\ C_1\ E_1)\ E_4$				
Kapasan	35 (14)	27 (11)	26 (11)	1 (0·4)	12 (5)	12 (5)	42 (17)	87 (36)	0·4 (0·2)	— (—)	1 (0·4)	1 (0·2)	0·2 (—)	243
Bhadeshar	21 (16)	16 (12)	17 (13)	0·2 (0.2)	7 (5)	6 (5)	22 (16)	42 (31)	0·3 (0.2)	— (—)	0·3 (0.2)	3 (2)	0·2 (0.1)	135
Nimbahera	21 (17)	20 (16)	21 (17)	0·3 (0·2)	7 (6)	7 (6)	11 (9)	34 (28)	0·3 (0·2)	— (—)	0·4 (0·4)	0·3 (0·3)	0·2 (0·1)	122
Dungla	18 (18)	13 (13)	14 (14)	0·1 (0·1)	5 (5)	6 (5)	20 (19)	26 (25)	0·2 (0·2)	— (—)	0·3 (0·3)	— —	— (—)	102
Bari Sadari	17 (20)	12 (14)	14 (16)	0·2 (0·2)	5 (6)	6 (6)	7 (8)	25 (28)	0·3 (0·3)	— (—)	0·4 (1)	— (—)	— (—)	88
Chhoti Sadari	17 (19)	14 (16)	15 (16)	0·2 (0.2)	6 (7)	6 (7)	4 (5)	28 (30)	0·3 (0.4)	— (—)	0·2 (0.3)	— (—)	— (—)	91
Udaipur														
Vallabhnagar	35 (15)	32 (14)	30 (13)	1 (0.2)	14 (6)	12 (5)	37 (16)	63 (28)	1 (0.2)	— (—)	1 (0.4)	1 (0.3)	— (—)	225
Kota														
Ladpura	18 (15)	23 (29)	13 (11)	0·3 (0·2)	8 (7)	6 (6)	4 (4)	30 (26)	0·4 (0·3)	— (—)	0·4 (0·4)	0·1 (0·1)	1 (1)	115
Digod	22 (20)	13 (12)	11 (10)	0·2 (0·2)	5 (4)	5 (4)	14 (13)	33 (30)	1 (1)	— (—)	0·3 (0·3)	0·3 (0·2)	0·4 (0·4)	111
Bundi														
Bundi	34 (14)	34 (15)	32 (13)	0·4 (0·2)	14 (6)	12 (5)	23 (10)	85 (36)	(—) (—)	0·4 (0·2)	0·3 (0·1)	0·4 (0·2)	0·4 (0·2)	237
Bharatpur														
Rupbas	15 (17)	11 (13)	9 (10)	7 (8)	15 (17)	12 (14)	3 (4)	11 (13)	0·4 (1)	— (—)	1 (1)	0·1 (0·1)	1 (2)	85
Baseri	14 (13)	21 (19)	15 (14)	1 (1)	18 (17)	12 (11)	2 (2)	21 (19)	0·2 (0·2)	— (—)	1 (1)	0·3 (0·3)	1 (1)	109
Bari	15 (16)	15 (17)	10 (12)	1 (1)	17 (9)	11 (13)	3 (4)	15 (17)	0·3 (0·3)	— (—)	1 (1)	0·3 (0·4)	0·3 (0·4)	89
Rajakhera	9 (16)	6 (11)	6 (11)	1 (2)	8 (14)	8 (14)	3 (5)	13 (24)	0·4 (1)	— (—)	1 (1)	1 (1)	1 (1)	56
Dholpur .	26 (20)	14 (11)	11 (9)	5 (4)	23 (19)	19 (15)	6 (5)	18 (14)	1 (0·4)	— (—)	1 (1)	0·3 (0·2)	1 (1)	126
Sawai Madhopur														
Hindaun	16 (14)	14 (12)	9 (8)	0·1 (0·1)	18 (16)	14 (12)	12 (11)	28 24	0·1 (0·1)	1 (1)	— (—)	1 (1)	2 (1)	115
Karauli	22 (11)	41 (19)	31 (15)	0·4 (0·2)	25 (12)	18 (9)	3 (1)	68 (32)	0·3 (0·2)	1 (1)	— (—)	1 (0·4)	1 (0·4)	212
Sapotra	14 (12)	21 (18)	15 (13)	0·2 (0·2)	15 (13)	9 (8)	4 (3)	36 (31)	0·1 (0·1)	1 (1)	— (—)	0·2 (0·2)	1 (1)	116

Bharatpur														
Beyana	15 (13)	14 (13)	10 (9)	3 (3)	16 (15)	13 (12)	5 (5)	31 (28)	0·2 (0·2)	— (—)	1 (1)	1 (1)	1 (1)	111
Kota														
Pipalda	27 (20)	15 (11)	17 (13)	0·2 (0·1)	7 (5)	6 (4)	10 (7)	50 (37)	1 (1)	— (—)	1 (1)	1 (1)	1 (0·4)	135
Ramganj Mandi	16 (17)	16 (17)	17 (18)	0·1 (0·1)	7 (7)	8 (8)	4 (5)	27 (28)	0·3 (0·3)	— (—)	0·3 (0·3)	0·2 (0·2)	0·2 (0·2)	97
Bundi														
Nainwa	27 (17)	23 (15)	22 (14)	0·3 (0·2)	8 (5)	7 (4)	16 (10)	55 (34)	— (—)	0·3 (0·2)	0·4 (0·3)	— (—)	0·4 (0·3)	158
Keshoraipatan	27 (18)	16 (11)	18 (12)	0·3 (0·1)	7 (5)	7 (4)	15 (10)	60 (39)	(—) (—)	1 (0·3)	1 (0·4)	0·4 (0·2)	1 (0·4)	153
Jhalawar														
Pachpahar	14 (13)	22 (20)	19 (17)	0·1 (0·1)	7 (7)	6 (6)	4 (3)	35 (32)	1 (1)	— (—)	0·4 (0·4)	0·1 (0·1)	0·1 (0·1)	108
Sawai Madhopur														
Khandar	13 (15)	12 (14)	9 (11)	0·2 (0·2)	10 (11)	6 (7)	2 (2)	33 (39)	— (—)	— (—)	0·3 (0·2)	0·4 (0·2)	1 (1)	85
Chittaurgarh														
Pratapgarh	42 (20)	39 (19)	39 (19)	0·4 (0·2)	16 (8)	14 (7)	12 (6)	41 (20)	2 (1)	— (—)	1 (0·4)	0·1 (0·1)	— (—)	206
Bharatpur														
Bharatpur	25 (16)	20 (13)	17 (11)	8 (5)	27 (17)	23 (15)	12 (7)	18 (12)	0·4 (0·3)	— (—)	2 (2)	0·1 (0·1)	3 (2)	154
Deeg	14 (17)	9 (11)	8 (9)	2 (2)	12 (14)	11 (13)	10 (12)	15 (18)	0·2 (0·2)	— (—)	1 (1)	0·2 (0·1)	2 (2)	84

Rainfall Zone—IX *Rainfall Pattern* E_4 *(*A_1 B_1 C_1 E_1*)* E_4

Kota														
Mangrol	25 (23)	15 (13)	17 (15)	0·2 (0·2)	6 (5)	5 (5)	7 (6)	33 (30)	1 (1)	— (—)	0·3 (0·3)	0·2 (0·1)	1 (1)	109
Baran	19 (23)	13 (16)	15 (18)	0·2 (0·2)	4 (6)	4 (5)	4 (5)	20 (24)	1 (1)	— (—)	1 (1)	0·2 (0·1)	1 (1)	82
Sangod	26 (20)	20 (15)	23 (17)	0·2 (0·2)	8 (6)	7 (5)	11 (8)	36 (27)	1 (1)	— (—)	0·2 (0·2	0·4 (0·3)	1 (1)	134
Shahbad	19 (24)	20 (25)	20 (24)	0·2 (0·2)	9 (11)	6 (7)	0·4 (1)	7 (8)	0·2 (0·3)	— (—)	— (—)	0·1 (0·2)	0·3 (0·4)	82

Rainfall Zone—X *Rainfall Pattern—*E_4 (A$_2$ C_1 E_1) E_4

Kota														
Kishanganj	20 (21)	23 (24)	22 (22)	0·2 (0·3)	9 (10)	7 (8)	1 (1)	11 (12)	1 (1)	— (—)	0·1 (0·1)	0·2 (0·2)	0·3 (0·4)	96
Atrau	23 (25)	15 (17)	17 (19)	0·2 (0·2)	6 (6)	5 (6)	3 (3)	21 (23)	1 (1)	— (—)	0·3 (0·4)	0·2 (0·1)	1 (1)	92
Chhabra	19 (23)	16 (19)	17 (19)	0·3 (0·3)	8 (10)	7 (8)	1 (1)	15 (18)	1 (1)	— (—)	0·4 (0·4)	0·1 (0·1)	0.2 (0·3)	86

APPENDIX 2 (*Concld*)

(thousands)

District	Cattle			Buffaloes			Sheep	Goats	Horses & ponies	Mules	Donkeys	Camels	Pigs	Total Live-stock
	m	f	ys	m	f	ys								
	Rainfall Zone—X (concld)				..		..		..		*Rainfall Pattern*—E_4 (A_2 C_1 E_1) E_4			
Chhipabarod	22 (20)	19 (18)	20 (19)	0·2 (0·2)	8 (7)	7 (6)	2 (2)	28 (26)	1 (1)	— (—)	0·4 (0·4)	0·4 (0·4)	0·3 (0·3)	109
Jhalawar														
Khanpur	25 (21)	18 (15)	21 (18)	0·2 (0·2)	8 (7)	8 (6)	8 (7)	29 (25)	1 (1)	— (—)	0·1 (0·2)	1 (0·4)	1 (0·3)	119
Jhalarapatan	25 (15)	25 (15)	27 (17)	0·3 (0·2)	16 (10)	15 (9)	4 (2)	48 (30)	0·3 (0·2)	— (—)	1 (0·4)	0·1 (0·1)	1 (0·4)	163
Aklera	38 (18)	33 (16)	38 (18)	0·3 (0·1)	18 (9)	18 (9)	6 (3)	54 (26)	1 (1)	— (—)	1 (0·3)	0·2 (0·1)	0·4 (0·2)	210
Pirawa	21 (14)	27 (17)	25 (17)	0·2 (0·1)	12 (8)	12 (8)	5 (3)	48 (32)	1 (0·4)	— (—)	1 (0·4)	0·4 (0·3)	0·2 (0·2)	152
Gangdhar	18 (13)	33 (24)	27 (20)	0·2 (0·1)	9 (7)	8 (6)	2 (2)	35 (26)	1 (1)	— (—)	0·3 (0·3)	1 (1)	0·1 (0·1)	137
Sawai Madhopur														
Sawai Madhopur	30 (17)	24 (13)	20 (11)	0·4 (2)	13 (8)	11 (6)	15 (9)	59 (33)	0·2 (0·1)	1 (1)	— (—)	1 (0·4)	2 (1)	178
Banswara														
Ghatol	42 (20)	27 (13)	30 (15)	0·3 (0·1)	15 (7)	13 (6)	7 (4)	69 (34)	1 (0·2)	— (—)	3 (1)	1 (0·3)	— (—)	206
Banswara	42 (22)	27 (14)	26 (14)	0·2 (0·1)	14 (8)	11 (6)	4 (2)	60 (32)	0·2 (0·2)	— (—)	2 (1)	0·3 (0·2)	— (—)	187
Kushalgarh	43 (25)	25 (15)	28 (17)	0·2 (0·1)	10 (6)	8 (5)	1 (1)	50 (30)	0·4 (0·2)	— (—)	2 (1)	— (—)	— (—)	168
	Rainfall Zone—XI				..		..		..		*Rainfall Pattern*—E_4 (A_1 B_1 E_2) E_4			
Sirohi														
Abu Road	13 (13)	14 (13)	14 (13)	0·2 (0·2)	6 (6)	5 (4)	12 (11)	40 (39)	0·2 (0·2)	— (—)	1 (1)	0·2 (0·2)	— (—)	105

APPENDIX 3

Rainfall and Cropping Patterns

RAJASTHAN

Cropping Patterns	District taluk	Geographical area (sq km)	Elevation (masl) max	Elevation (masl) min	Annual rainfall total (cm)	rd	mmr	mr	md	Consecutive months* a	b	c
	Rainfall Zone—I	..			..		..	*Rainfall Pattern*—E_4 (D_2 E_2) E_4				
	Jaisalmer											
	Jaisalmer	29,785	336	96	18	13	8′	12	7			
	Pokaran	9,049	323	111	—	—	na	—	—			
	Barmer											
	Pachpadara	3,457	657	150	27	13	8′	18	8			
	Sheo	6,617	660	148	21	10	7′	15	7			
B_2 $Pu_4/F_4/Jk_4$	**Jodhpur**											
	Shergarh	3,813	368	277	27	14	8′	18	9			
B_3 Pu_3/F_3	**Bikaner**											
	Kolavat	7,952	309	166	—	—	na	—	—			
	Jodhpur											
	Phalodi	7,738	383	222	24	15	8′	15	9			
Pu_2 B_3	**Bikaner**											
	Bikaner	9,220	238	158	31	19	8-7′	19	10			
	Nokha	3,796	384	300	27	16	8′	17	9			
Pu_3 B_3	**Churu**											
	Sadarshahar	3,852	250	222	28	18	7-8	17	10			
	Dungargarh	3,003	295	235	26	17	7-8	16	9			
	Bikaner											
	Lunkaransar	6,376	222	197	23	13	7-8	14	7			
C_4 W_4 F_4	**Ganganagar**											
	Karanpur	819	173	150	19	13	7	12	7			
	Ganganagar	985	175	174	24	16	8-7	15	7			
	Padampur	843	174	169	20	13	8-7	13	7			
W_4 F_4 G_4 C_4/D_4	Raisingnagar	1,321	169	150	21	14	7	13	7			
	Anupgarh	3,363	169	150	19	12	7-8	12	7			
C_3 F_4 $B_4/W_4/C_4$	**Ganganagar**											
	Sangaria	691	190	187	—	—	na	—	—			
	Hanumangarh	1,205	219	183	29	17	7	17	8			
	Tibi	742	219	212	—	—	na	—	—			
	Nohar	4,350	226	183	31	18	7-8	17	9			
	Sadulshahar	770	275	190	—	—	na	—	—			
	Suratgarh	3,815	183	183	23	16	8-7	13	8			
	Rainfall Zone—II	..	.		..		..	*Rainfall Pattern*—E_4 (C_1 D_1 E_2) E_4				
	Barmer											
B_1	Chohtan	4,692	657	150	24	10	8′	18	7	—	—	—
	Barmer	11,361	642	114	31	17	8′	24	11	7-2	24	11

masl = metres above sea level

rd = rainy days

mmr = month of maximum rainfall

mr = total rainfall of mmr plus that of preceding or following month, whichever is higher, in cm.

md = number of rainy days of mmr plus that of preceding or following months, whichever has higher rainfall.

* = Consecutive months with rainfall of more than 10 cm per month

a = Initial month with more than 10 cm of rainfall and number of consecutive months with more than 10 cm/month, separated by hyphen.

b = Total rainfall of consecutive months in 'a', in cm.

c = Total number of rainy days of consecutive months in 'a'

na = not available.

NOTE : Information on rainfall and rainy days are based on the Memoirs of India Meteorological Department Vol. XXXI, Part III as on 12th May, 1961.

APPENDIX 3 (*Contd.*)

Cropping Patterns	District/ taluk	Geographical area (sq km)	Elevation (masl) max	Elevation (masl) min	Annual rainfall total (cm)	rd	mmr	mr	md	Consecutive months* a	b	c
	Rainfall Zone—III		..	..		..	..		*Rainfall Pattern—E_4 (C_2 D_1 E_1) E_4*			
B_1	**Jodhpur**											
	Jodhpur	3,509	272	224	37	20	8′	23	12	7-2	23	12
	Barmer											
	Siwana	2,045	975	150	34	15	8′	24	10	7-2	24	10
	Jalore											
	Jalore	2,247	358	150	36	18	8′	25	12	7-2	25	12
	Jaswantpura	3,440	991	64	47	22	7	34	15	7-2	34	15
	Sanchore	3,017	175	17	38	18	7-8	29	12	7-2	29	12
B_2 Pu_4/F_4/Jk_4 .	Ahore	1,861	644	150	—na—							
	Jhunjhunu											
	Khetri	1,468	782	450	56	33	7	33	17	7-2	33	17
	Udaipurwati	1,534	987	450	—na—							
	Jhunjhunu											
	Jhunjhunu	1,592	513	300	39	27	7	22	13	7-2	33	13
	Sikar											
	Neem-ka Thana	1,188	846	450	51	33	7-8	30	18	7-2	30	18
	Dunta-Ramgarh	1,378	913	450	43	31	7	29	20	7-2	29	20
	Sikar	1,515	1,052	437	44	30	8	28	16	7-2	28	16
	Lachhmengarh	1,219	403	367	—na—							
	Fatehpur	1,071	367	339	—na—							
	Nagaur											
	Ladhu	1,258	398	300	—na—							
	Didwana	1,647	450	437	36	22	8	24	12	7-2	24	12
	Nagaur											
	Nawa	1,525	645	450	47	27	7	31	16	7-2	31	16
	Parbatsar	2,223	739	394	39	20	7	26	12	7-2	26	12
	Degana	1,906	444	300	—na—							
	Jayal	2,081	473	300	—na—							
	Jodhpur											
	Osian	4,184	423	300	—na—							
B_3 Pu_3/F_3 . .	**Jhunjhunu**											
	Chirawa	1,333	554	300	41	26	7	25	14	7-2	25	14
	Churu											
	Sujangarh	2,694	357	347	37	21	7	23	11	7-2	23	11
B_3 Pu_4 F_4 .	**Nagaur**											
	Nagaur	4,707	357	296	31	20	8	19	11	—	—	—
	Jodhpur											
	Bilara	3,400	450	300	43	21	8′	30	12	7-2	30	12
	Churu											
	Rajgarh	2,202	253	240	34	22	7	19	11	—	—	—
B_3 O_4 Jk_4/F_4/Pu_4	**Pali**											
	Jaitaran	1,376	543	333	38	18	8′	26	11	7-2	26	11
	Sojat	1,678	479	275	47	22	8′	34	14	7-2	34	14
	Pali	3,086	479	212	41	19	8′	29	12	7-2	29	12
B_4 O_4 Jk_4/F_4/Pu_4	**Nagaur**											
	Merta	2,297	330	299	42	22	8′	28	13	7-2	28	13
B_4 O_4 $Pu_5$$Jk_4$/$W_4$	**Pali**											
	Raipur	1,019	731	300	—na—							
G_3 F_4 B_4/W_4/O_4	**Ganganagar**											
	Bhadra	1,734	232	205	39	20	7	23	10	7-2	23	10

सत्यमेव जयते

APPENDIX 3 (*Contd.*)

Cropping Patterns	District taluk	Geographical area (sq km)	Elevation (masl)		Annual rainfall					Consecutive months*		
			max	min	total (cm)	rd	mmr	mr	md	a	b	c
	Rainfall Zone—III	..		..	..		..			*Rainfall Pattern—E_4 (C_2 D_1 E_1) E_4*		
Pu_3 B_3	**Sikar**											
	Sri Madhopur	1,378	716	450	49	28	7-8	29	16	7-2	29	16
	Churu											
	Ratangarh	1,698	397	329	35	21	8-7	22	11	7-2	22	11
	Churu	1,589	329	297	37	21	7-8	22	11	7-2	22	11
	Taranagar	1,822	257	253	30	19	7-8	18	10	—	—	--
F_4 B_4 O_4 Jk_4	**Pali**											
	Kharchi	1,393	450	266				na				
O_4 F_4 B_4 Pu_4/M_4	**Sirohi**											
	Sheoganj	895	450	300	49	24	80	34	15	7-2	34	15
	Rainfall Zone—IV	..		..	..		..			*Rainfall Pattern—E_4 (C_2 D_2) E_4*		
M_2 Pu_4 Gn_4/Ba_4	**Udaipur**											
	Bhim	697	846	600	57	26	8	39	16	7-3	48	2
	Deogarh	599	968	600				na				
M_3O_4 Ba_5 ($Pu_4/W_4/C_4$)	Amet	535	600	600				na				
	Rajsamand	609	759	600	54	21	7	36	13	7-3	47	17
	Bhilwara											
	Raipur	518	601	450				na				
M_3 W_4 Ba_4 $O_4/Gn_4/$ C_4	Asind	1,135	853	450				na				
	Mandal	1,211	490	450				na				
M_4 W_4 Ba_4 ($F_4/Jk4$) O_5	Hurda	617	469	450				na				
	Ajmer											
M_4 Jk_4 B_4 Ba_4	Beawar	1,463	580	450	47	26	7-8	29	15	7-2	29	15
B_3 Pu_4 G_4Ba_4/F_4	**Jaipur**											
	Kotputli	825	775	349	52	31	8-7	31	17	7-2	31	17
	Bairath	1,023	729	450	57	34	7-8	35	20	7-3	45	25
	Amber	1,246	789	450	64	36	8	41	21	7-3	51	27
	Jamwa-Ramgarh	1,369	699	450	58	34	8-7	37	20	7-2	37	20
	Phulera	147	550	450				na				
	Jaipur	527	450	410	60	35	8	39	20	7-2	39	20
	Sanganer	702	516	366	56	32	7-8	37	19	7-2	37	19
B_3 O_4 Pu_5 Jk_4/W_4	**Ajmer**											
	Ajmer	2,288	799	450	52	31	8-7	33	18	7-2	33	18
B_4 Ba_4 W_4 $Pu_4/C_4/O_4/Gn_4$	**Jaipur**											
	Chaksu	812	310	300	54	31	7	36	19	7-2	36	19
	Phagi	1,114	456	300				na				
Jk_4 B_4 O_4 Pu_4/M_4	**Jaipur**											
	Dudu	1,339	383	300	48	28	7	34	17	7-2	34	17
	Aimer											
	Kishangarh	1,729	450	442				na				
Jk_4 W_4 G_4 M_4	Sarwar	1,039	450	450	53	24	7-8	38	15	7-2	38	15
	Tonk											
	Malpura	1,463	371	300	51	31	7	34	19	7-2	34	19
	Rainfall Zone—V	..		..	..		..			*Rainfall Pattern—E_4 (C_3 D_1) E_4*		
B_3 C_4 W_4/Ba_4	**Alwar**											
	Behror	730	413	300				na				
	Mandawar	573	450	300	57	30	7	34	17	7-3	45	21
	Kishangarh	748	428	300	61	32	7-8	35	18	7-3	47	23
	Tijara	683	428	300	59	33	7-8	35	17	7-3	46	22

APPENDIX 3 (*Contd.*)

Cropping Patterns	District taluk	Geographical area (sq km)	Elevation (masl)		Annual rainfall					Consecutive months*		
			max	min	total (cm)	rd	mmr	mr	md	a	b	c
	Rainfall Zone—V (concld.)		..		..	..		..	*Rainfall Pattern—E_4 (C_3 D_1) E_4*			
	Sawai Madhopur											
	Todabhim	545	300	242	59	35	7-8	37	21	7-3	47	26
B_3 Pu_4 G_4 Ba_4/F_4	**Alwar**											
	Bansur	663	450	300	na							
	Thanagazi	729	667	300	na							
B_4 Ba_4 W_4 Pu_4/ C_4/O_4/Gn_4	**Jaipur**											
	Bassi	655	570	300	na							
	Dausa	919	523	300	56	33	7	36	20	7-3	46	25
	Baswa	631	300	242	58	36	8′	34	21	7-3	45	26
	Sikrai	504	395	242	na							
	Bharatpur											
	Weir	614	405	300	na							
	Sawai Madhopur											
	Mahwa	478	411	300	58	33	7-8	36	19	7-3	46	24
W_4 Jk_4 C_4 B_4	Nadauti	653	300	300	na							
	Alwar											
G_4 W_4 B_4 Jk_4/O_4	Lachhmangarh	1,161	413	300	57	34	7	35	18	7-3	46	22
	Alwar	1,457	612	300	64	36	8′	37	20	7-3	50	25
	Bharatpur											
	Kaman	734	272	252	65	35	8-7	39	19	7-3	52	24
	Nagar	468	323	300	na							
	Nadbai	447	300	218	62	34	8-7	38	20	7-3	49	25
	Alwar											
G_4 W_4 B_4 Jk_4/Ba_4	Rajgarh	953	600	300	na							
	Rainfall Zone—VI	..			..	..		..	*Rainfall Pattern—E_4 (B_1 C_1 E_2) E_4*			
	Udaipur											
M_1	Kotra	2,422	1,166	300	na							
M_2 Mt_5 W_5	Kumbhalgarh	776	1,181	600	na							
	Gogunda	878	1,183	600	na							
M_2 W_4 Ba_4/Mt_4/ Gn_4	Girwa	1,708	785	300	na							
	Mavli	846	600	600	na							
	Phalasia	1,222	1,046	300	na							
	Nathdwara	942	1,090	600	na							
M_3 Pd_4 W_4 G_4/ Mt_4	Kherwara	1,091	600	300	67	35	7	44	22	7-3	54	27
	Sirohi											
M_3 W_4 O_4 Mt_4/ Pu4	Pindwara	1,122	1,097	300	na							
	Udaipur											
M_4 W_4 Jk_4 Gn_4/ C4	Railmagra	559	600	600	na							
	Pali											
F_3 O_4 M_4	Desuri	1,281	551	276	63	27	8′	42	17	7-3	53	19
P_4 F_4 B_4 Pur_4/M_4	Bali	2,391	1,099	300	56	27	8′	39	16	7-2	39	16
	Sirohi											
B_4 O_4 Pu_4 Mt_4/F_4	Sirohi	1,175	302	300	57	27	8′	40	17	7-2	40	17
	Reodhar	1,089	991	300	na							
	Rainfall Zone—VII		..		..	..		..	*Rainfall Pattern—E_4 (B_2 E_2) E_4*			
	Sawai Madhopur											
B_3 G_4 W_4 Gn_4	Gangapur	644	300	269	66	35	7-8	45	22	7-3	55	26
B_4 Ba_4 W_4 Pu_4/G_4 O_4/Gn_4	Malarnachor	1,015	450	388	71	34	7	49	22	7-3	60	27

APPENDIX 3 (*Contd.*)

Cropping Patterns	District taluk	Geographical area (sq km)	Elevation (masl)		Annual rainfall					Consecutive months*		
			max.	min.	total (cm)	rd	mmr	mr	md	a	b	c
	Rainfall Zone—VII (contd.)		..		..	..		..	*Rainfall Pattern—E_4 (B_2 E_2) E_4*			
	Tonk											
	Nawai	1,030	541	300	60	35	7	40	22	7-3	49	27
	Jaipur											
	Lalsot	871	432	300	63	33	8-7	43	21	7-3	53	25
	Bhilwara											
M_3 W_4 Ba_4 O_4/ Gn_4/C_4	Mandalgarh	1,539	555	450	na							
	Banera	677	681	425	na							
	Kotri	928	838	499	na							
	Bhilwara	958	478	450	75	32	8	56	23	7-3	68	28
M_3 O_4 Ba_5 (Pu_4/ W_4/ C_4)	Sahara	652	689	450	na							
	Bundi											
M_4 W_4 Ba_4 O_5	Hindoli	1,379	401	300	75	35	7	56	23	7-3	66	28
	Bhilwara											
M_4 W_4 Ba_4 (F_4/ Jk_4) O_5	.Shahpura	1,128	425	369	66	33	7-8	46	20	7-2	46	20
	Jahazpur	1,083	529	450	84	33	7	65	24	7-3	75	28
	Chittaurgarh											
M_4 W_4 Jk_4 Gn_4/ C_4	Rashmi	451	450	450	na							
	Gangrar	724	450	450	na							
	Begun	2,408	561	450	na							
	Tonk											
Jk_3 W_4 G_4/M_4/ C_4/Pur_4	Tonk	1,487	445	300	67	33	7	46	21	7-3	54	25
	Uniara	987	437	300	64	31	7-8	44	20	7-3	54	24
	Todaraisingh	976	346	300	61	33	8-7	43	21	7-3	53	26
	Deoli	1,245	338	300	na							
	Ajmer											
Jk_4 W_4 G_4 M_4	Kekri	1,809	673	450	61	30	7-8	42	18	7-2	42	18
	Sawai Madhopur											
W_4 Jk_4 G_4 B_4	Bamanwas	739	300	300	na							
	Rainfall Zone—VIII		..		..	..		..	*Rainfall Pattern—E_4 (B_2 C_1 F_1) E_4*			
	Udaipur											
M_2 W_4 Ba_4 /Mt_4/ Gn_4	Salumbar	936	572	300	na							
	Sarada	1,087	785	300	70	25	7	48	17	7-3	59	21
M_3 Pd_4 W_4 G_4/ Mt_4	Lasadia	1,436	488	300	na							
	Dungarpur											
	Dungarpur	1,785	429	300	73	37	7	47	24	6-4	69	33
	Aspur	692	300	150	na							
M_4 Pd_4 G_4 Mt_4 C_4/W_4	Sagwara	1,305	236	150	70	35	7	47	23	6-4	66	33
	Banswara											
	Garhi	708	259	150	86	37	7	56	24	6-4	80	34
	Bagidora	859	263	150	na							
	Chittaurgarh											
M_4 W_4 Jk_4 Gn_4/ C_4	Chittaurgarh	692	601	401	101	34	8-7	74	22	7-3	88	28
	Kapasan	910	510	450	78	28	8	59	20	7-3	68	24
	Bhadesar	542	504	450	na							
	Nimbahera	834	583	450	71	31	8	49	20	7-3	60	25

APPENDIX 3 (*Contd.*)

Cropping Patterns	District	Geographical area (sq km.)	Elevation		Annual rainfall					Consecutive months*		
	taluk		masl) max.	min.	total (cm)	rd	mmr	mr	md	a	b	c
	Rainfall Zone—VIII (contd.)		..		..		..	..	*Rainfall Pattern—E_4 (B_2 C_1 E_1) E_4*			
	Dungla	494	450	450	na							
	Bari-Sadri	466	596	300	na							
	Chhoti-Sadri	710	600	300	na							
	Udaipur											
	Vallabhpur	1,030	600	300	na							
	Kota											
W_3 Jk_3 G_4/O_4	Ladpura	1,540	492	265	na							
	Digod	913	252	241	na							
	Bundi											
	Bundi	1,922	508	300	76	36	7-8	54	22	7-3	64	28
	Bharatpur											
W_4 G_4 B_4 O_4	Rupbas	549	300	247	na							
B_3 G_4 W_4/Ba_4	Baseri	998	357	300	63	32	8′	40	19	7-3	52	24
	Bari	810	323	247	72	37	7	47	22	7-3	59	28
	Rajakhera	387	177	150	69	34	8′	44	21	7-3	57	26
	Dholpur	811	286	177	72	39	8-7	46	23	7-3	59	29
	Sawai-Madhopur											
	Hindaun	641	300	232	66	35	8-7	45	21	7-3	55	26
	Karauli	1,819	410	300	71	35	8-7	48	21	7-3	59	26
B_3 G_4 W_4 Gn_4	Sapotra	1404	475	227	74	36	7	51	22	7-3	61	28
B_4 W_4 G_4 D_4/Ba_4 Pu_4/Gn_4	**Bharatpur**											
	Bayana	804	375	195	64	35	7	42	21	7-3	54	26
Jk_3W_4 $G_4/M_4/C_4/$ Pu_4	**Kota**											
	Pipalda	1,126	300	241	na							
	Ramganjmandi	795	385	300	na							
	Bundi											
	Nainwa	1,136	450	300	na							
	Keshoraipatan	1,184	504	241	78	36	7-8	56	23	7-3	67	29
	Jhalawar											
	Pachpahar	712	493	450	na							
Jk_3 B_4 (G_4 W_4) (O_4 Pu_4)	**Sawai Madhopur**											
	Khandan	960	446	300	72	37	8-7	46	23	7-3	59	29
Jk_4 W_4 G_4 M_4	**Chittaurgarh**											
	Pratapgarh	2,165	526	300	91	41	7	59	25	6-4	85	37
G_4 W_4 B_4 $Jk_4/$ O_4	**Bharatpur**											
	Bharatpur	955	218	170	67	36	8-7	417	20	7-3	54	26
	Deeg	501	204	178	na							
	Rainfall Zone—IX	..		..		..		..	*Rainfall Pattern—E_4 (A_1 B_1 C_1E_1) E_4*			
Jk_3 W_4 $C_4/M_4/C_4/$ Pu_4	**Kota**											
	Mangrol	984	300	279	83	41	7	57	25	7-3	69	32
	Baran	632	300	300	89	42	7	62	26	7-3	75	32
	Sangod	1,191	300	269	90	41	7	62	25	7-3	77	32
W_3 Jk_4 G_4/O_4	Shahbad	1,488	300	219	86	45	7	59	27	7-3	72	34
	Rainfall Zone—X	..		..		..		..	*Rainfall Pattern—E_4 (A_2 C_1 E_1) E_4*			
Jk_3 W_4 $G_4/M_4/$ Pu_4	**Kota**											
	Kishanganj	1,429	367	300	95	42	8	47	20	8-2	47	20
	Atru	857	300	299	99	43	7	69	26	7-3	85	33

APPENDIX 3 (*Concld.*)

Cropping Patterns	District taluk	Geographical area (sq km)	Elevation (masl) max	Elevation (masl) min	Annual rainfall total (cm)	rd	mmr	mr	md	Consecutive months* a	Consecutive months* b	Consecutive months* c
	Rainfall Zone—X (concld.)		..		..	..	..	*Rainfall Pattern—E_3 (A_2 C_1 E_1) E_4*				
	Chhabra	802	338	300	108	38	7	71	23	6-4	101	33
	Chhipabarod	833	439	338	105	45	7	72	26	6-4	97	38
	Jhalawar											
	Khanpur	905	351	300	98	43	7	68	25	7-3	83	33
	Jhalrapatan	1,159	415	300				—na—				
	Aklera	1,423	439	300	96	44	7	64	26	7-3	80	23
Jk_3 C_4 M_4 B_4/W_4	Pirawa	1,039	496	415	94	40	7	64	23	6-4	88	35
	Gangdhar	914	450	450				—na—				
Jk_3 B_4 (G_4 W_4)/ O_4 Pu_4	**Sawai Madhopur**											
	Sawai Madhopur	1645	437	317	89	38	7	64	25	7-3	76	31
M_3 Pd_4 W_4 G_4/ Mt_4	**Banswara**											
	Ghatol	1,305	300	150				—na—				
M_4 W_4 Jk_4Gn_4/C_4	Banswara	1,149	450	300	93	42	7	63	27	6-4	88	39
M_4 Pd_4 G_4 Mt_4 C_4/W_4	Kushalgarh	1,046	450	300	102	43	7	65	28	6-4	96	40
	Rainfall Zone—XI		..	..	..		..	*Rainfall Pattern—E_4 (A_1 B_1 E_2) E_4*				
M_3 W_4 O_4 Mt_4/ Pu_4	**Sirohi**											
	Abu Road	898	1,158	263	85	36	7	65	26	7-2	65	26

सत्यमेव जयते

APPENDIX 4

Area under Principal Crops—1969-70

RAJASTHAN

(thousands hectares)

District/taluk	Gca	Paddy	Jowar Kharif	Jowar Rabi	Bajra	Maize	Ragi	Wheat	Barley	Mt	Gram	Tur	Pu	Sugarcane	Groundnut	O	Cotton	L	Fodder	Mc
	Rainfall Zone—I			..				..					..			*Rainfall Pattern—E_4 (D_2 E_2) E_4*				
Jaisalmer																				
Jaisalmer	3	— (—)	— (—)	— (—)	3 (90)	— (—)	— (—)	0·1 (5)	neg. (0·4)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	neg. (0·2)	— (—)	— (—)	0·1 (4)	— (—)
Pokaran	26	— (—)	— (—)	— (—)	24 (92)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	2 (8)	— (—)
Barmer																				
Pachpadra	102	— (—)	0·2 (0·2)	— (—)	86 (84)	— (—)	— (—)	4 (3)	0·1 (0·2)	— (—)	— (—)	— (—)	5 (5)	— (—)	— (—)	1 (1)	— (—)	— (—)	5 (5)	1 (1)
Sheo	36	— (—)	— (—)	— (—)	35 (97)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	1 (3)	— (—)
Jodhpur																				
Shergarh	174	— (—)	— (—)	— (—)	105 (60)	— (—)	— (—)	0·4 (0·2)	— (—)	— (—)	— (—)	— (—)	59 (34)	— (—)	— (—)	— (—)	— (—)	— (—)	10 (6)	— (—)
Bikaner																				
Kalavat	64	— (—)	0·1 (0·1)	— (—)	32 (50)	— (—)	— (—)	0·1 (0·2)	— (—)	— (—)	— (—)	— (—)	21 (34)	— (—)	— (—)	1 (1)	— (—)	— (—)	10 (15)	— (—)
Jodhpur																				
Phalodi	265	— (—)	3 (1)	— (—)	126 (48)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	35 (13)	— (—)	— (—)	— (—)	— (—)	— (—)	101 (38)	— (—)
Bikaner																				
Bikaner	90	— (—)	— (—)	— (—)	32 (35)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	51 (57)	— (—)	— (—)	1 (1)	— (—)	— (—)	6 (7)	— (—)
Nokha	192	— (—)	0·1 (0·1)	— (—)	87 (46)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	100 (52)	— (—)	— (—)	0·2 (0·1)	— (—)	— (—)	4 (2)	— (—)
Churu																				
Sardarshahar	225	— (—)	— (—)	— (—)	72 (32)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	74 (33)	— (—)	— (—)	1 (1)	— (—)	— (—)	77 (34)	— (—)
Dungargarh	158	— (—)	— (—)	— (—)	66 (42)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	77 (49)	— (—)	— (—)	0·4 (0·2)	— (—)	— (—)	15 (9)	— (—)
Bikaner																				
Lunkaransar	95	— (—)	— (—)	— (—)	37 (39)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	38 (40)	— (—)	— (—)	2 (2)	— (—)	— (—)	17 (18)	— (—)
Ganganagar																				
Karanpur	54	— (—)	— (—)	— (—)	1 (3)	— (—)	— (—)	15 (28)	2 (4)	— (—)	5 (9)	— (—)	0·4 (1)	1 (2)	— (—)	2 (3)	16 (30)	— (—)	10 (19)	2 (1)
Ganganagar	83	— (—)	— (—)	— (—)	2 (3)	— (—)	— (—)	22 (26)	3 (4)	— (—)	8 (9)	— (—)	1 (1)	3 (4)	— (—)	3 (3)	23 (28)	— (—)	15 (18)	3 (4)
Padampur	58	— (—)	— (—)	— (—)	4 (6)	0·1 (0·1)	— (—)	13 (22)	3 (5)	— (—)	9 (15)	— (—)	0·4 (1)	2 (3)	— (—)	1 (2)	14 (24)	— (—)	11 (20)	1 (2)

Raisinghnagar	58	— (–)	0·1 (0·1)	— (—)	4 (6)	0·1 (0·2)	— (—)	13 (22)	4 (6)	— (—)	10 (18)	— (—)	0·4 (1)	1 (2)	— (—)	2 (3)	11 (19)	— (—)	12 (20)	2 (3)
Anupgarh	68	6 (9)	— (—)	— (—)	2 (3)	0·4 (1)	— (—)	15 (22)	1 (2)	— (—)	11 (15)	— (—)	0·4 (1)	2 (3)	— (—)	13 (19)	3 (5)	— (—)	13 (19)	1 (1)
Sangaria	60	0·2 (0·3)	— (—)	— (—)	3 (5)	— (—)	— (—)	9 (15)	2 (3)	— (—)	23 (9)	— (—)	0·1 (0·1)	1 (1)	— (—)	1 (1)	10 (16)	— (—)	10 (18)	1 (1)
Hanumangarh	103	3 (2)	1 (1)	— (—)	6 (6)	0·3 (0·3)	— (—)	15 (14)	2 (2)	— (—)	48 (47)	— (—)	0·2 (0·2)	1 (1)	— (—)	1 (1)	7 (7)	— (—)	17 (17)	1·5 (1·4)
Tibi	78	4 (5)	1 (1)	— (—)	5 (7)	0·1 (0·2)	— (—)	12 (15)	1 (2)	— (—)	36 (45)	— (—)	0·4 (0·4)	1 (1)	— (—)	1 (1)	5 (7)	— (—)	11 (15)	0·5 (0·7)
Nohar	323	— (—)	0·4 (0·2)	— (—)	68 (21)	— (—)	— (—)	7 (2)	7 (2)	— (—)	87 (27)	— (—)	53 (17)	1 (0·2)	— (—)	7 (2)	2 (1)	— (—)	82 (25)	9 (3)
Sadulshahar	64	— (—)	0·1 (0·1)	— (—)	2 (4)	— (—)	— (—)	12 (18)	4 (6)	— (—)	23 (37)	— (—)	0·1 (0·2)	1 (1)	— (—)	1 (1)	10 (15)	— (—)	10 (16)	1·2 (1·5)
Suratgarh	172	1 (1)	1 (1)	— (—)	23 (13)	0·3 (0·2)	— (—)	18 (10)	6 (4)	— (—)	49 (29)	— (—)	16 (9)	2 (1)	— (—)	3 (2)	7 (4)	— (—)	41 (24)	5 (2)
	Rainfall Zone—II .. .. *Rainfall Pattern*—E_4 (C_1 D_1 E_2) E_4																			
Barmer																				
Chohtan	27	— (—)	— (—)	— (—)	27 (99)	— (—)	— (—)	0·1 (0·3)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	0·1 (0·3)	— (—)
Barmer	259	— (—)	— (—)	— (—)	255 (99)	— (—)	— (—)	2 (1)	0·1 (—)	— (—)	— (—)	— (—)	0·3 (0·1)	— (—)	— (—)	— (—)	— (—)	— (—)	1 (0·2)	0·2 (0·1)
	Rainfall Zone— III .. .. *Rainfall Pattern*—E_4 (C_2 D_1 E_1) E_4																			
Jodhpur																				
Jodhpur	187	— (—)	1 (1)	— (—)	136 (73)	— (—)	— (—)	3 (1)	0·2 (0·1)	— (—)	— (—)	— (—)	21 (11)	— (—)	— (—)	6 (3)	— (—)	— (—)	19 (10)	1 (0·6)
Barmer																				
Siwana	27	— (—)	0·1 (0·3)	— (—)	19 (72)	— (—)	— (—)	4 (14)	1 (2)	— (—)	— (—)	— (—)	0·1 (0·3)	— (—)	— (—)	0·2 (1)	— (—)	— (—)	1 (5)	1·2 (5)
Jalor																				
Jalor	109	— (—)	— (—)	1 (1)	74 (68)	1 (1)	— (—)	12 (11)	0·3 (0·3)	0·1 (0·1)	— (—)	— (—)	1 (1)	— (—)	— (—)	3 (3)	0·1 (0·1)	— (—)	13 (12)	3 (2·6)
Jaswantpura	197	0·1 (0·1)	1 (0·4)	— (—)	133 (67)	0·2 (0·1)	— (—)	17 (9)	0·1 (0·1)	3 (1)	— (—)	— (—)	8 (4)	— (—)	— (—)	6 (3)	— (—)	— (—)	23 (12)	6 (3)
Sanchore	132	— (—)	— (—)	— (—)	116 (88)	— (—)	— (—)	7 (5)	2 (1)	— (—)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	6 (5)	1 (1)
Ahore	66	— (—)	0·3 (0·4)	— (—)	41 (62)	0·1 (0·2)	— (—)	4 (7)	1 (2)	0·1 (0·1)	— (—)	— (—)	1 (1)	— (—)	— (—)	8 (12)	1 (1)	— (—)	9 (14)	0·1 (0·2)
Jhunjhunu																				
Khetri	118	— (—)	0·4 (0·4)	— (—)	59 (50)	— (—)	— (—)	1 (1)	3 (2)	— (—)	22 (18)	— (—)	20 (17)	— (—)	— (—)	2 (1)	— (—)	— (—)	11 (10)	— (—)
Udaipurwati	118	— (—)	— (—)	— (—)	57 (48)	— (—)	— (—)	2 (2)	4 (3)	— (—)	0·3 (0·3)	— (—)	36 (31)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	16 (14)	2·2 (2)
Jhunjhunu	129	— (—)	— (—)	— (—)	64 (50)	— (—)	— (—)	0·3 (0·2)	0·2 (0·2)	— (—)	0·1 (0·1)	— (—)	42 (32)	— (—)	— (—)	— (—)	— (—)	— (—)	23 (18)	— (—)

Gca = gross cropped area Mc = miscellaneous crops. L = Plantation crops

NOTE : 1. Figures in brackets represent percentages to gross cropped area.
2. For other symbols refer to page 3.

APPENDIX 4 (*Contd.*)

(thousand hectares)

District/taluk	Gca	Paddy	Jowar Kharif	Jowar Rabi	Bajra	Maize	Ragi	Wheat	Barley	Mt.	Gram	Tur	Pu	Sugarcane	Groundnut	O	Cotton	L	Fodder	Mc
	Rainfall Zone—III (contd.)														*Rainfall Pattern*—E_4 (C_2 D_1 E_1)E_4					
Sikar																				
Neem-ka-Thana	65	— (—)	0·3 (1)	— (—)	32 (50)	0·4 (1)	— (—)	3 (4)	5 (8)	— (—)	6 (8)	0·2 (0.3)	10 (16)	— (—)	1 (2)	2 (2)	— (—)	— (—)	4 (7)	0·7 (1)
Danta Ramgarh	104	— (—)	— (—)	— (—)	49 (47)	— (—)	— (—)	3 (3)	5 (5)	— (—)	0·3 (0·3)	— (—)	28 (27)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	17 (16)	2 (2)
Sikar	115	— (—)	— (—)	— (—)	60 (52)	— (—)	— (—)	1 (1)	1 (1)	— (—)	— (—)	— (—)	28 (24)	— (—)	— (—)	— (—)	0·1 (0·1)	— (—)	25 (22)	— (—)
Lachhmangarh	95	— (—)	— (—)	— (—)	51 (53)	— (—)	— (—)	0·2 (0·2)	0·3 (0·3)	— (—)	— (—)	— (—)	19 (20)	— (—)	— (—)	— (—)	— (—)	— (—)	25 (26)	— (—)
Fatehpur.	80	— (—)	— (—)	— (—)	44 (51)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	— (—)	— (—)	18 (22)	— (—)	— (—)	— (—)	— (—)	— (—)	21 (27)	— (—)
Nagaur																				
Ladnu	85	— (—)	1 (1)	— (—)	45 (52)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	24 (29)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	16 (18)	— (—)
Didwana	120	— (—)	0·1 (0·1)	— (—)	62 (51)	— (—)	— (—)	1 (0·4)	1 (1)	— (—)	— (—)	— (—)	27 (23)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	29 (25)	— (—)
Nawa	100	— (—)	— (—)	— (—)	49 (49)	— (—)	— (—)	2 (2)	4 (4)	— (—)	— (—)	— (—)	31 (31)	— (—)	— (—)	0·1 (0·1)	— (—)	— (—)	13 (13)	1 (1)
Parbatsar	140	— (—)	2 (1)	— (—)	70 (50)	0·3 (0·2)	— (—)	1 (1)	2 (2)	— (—)	— (—)	— (—)	36 (25)	— (—)	— (—)	2 (2)	— (—)	— (—)	26 (19)	0·3 (0·2)
Degana	134	— (—)	6 (4)	— (—)	66 (49)	0·4 (0·4)	— (—)	2 (1)	1 (1)	— (—)	— (—)	— (—)	24 (18)	— (—)	0·3 (0·2)	6 (5)	0·2 (0·1)	— (—)	28 (21)	— (—)
Jayal	145	— (—)	4 (2)	— (—)	79 (55)	— (—)	— (—)	0·4 (0·3)	— (—)	— (—)	— (—)	— (—)	29 (20)	— (—)	— (—)	12 (8)	— (—)	— (—)	21 (14)	— (—)
Jodhpur																				
Osian	209	— (—)	— (—)	— (—)	130 (62)	— (—)	— (—)	4 (2)	0·1 (—)	— (—)	— (—)	— (—)	43 (21)	— (—)	— (—)	4 (2)	— (—)	— (—)	26 (12)	2 (1)
Jhunjhunu																				
Chirara	124	— (—)	— (—)	— (—)	57 (46)	— (—)	— (—)	1 (1)	1 (1)	— (—)	11 (9)	— (—)	36 (29)	— (—)	— (—)	0·1 (0.1)	— (—)	— (—)	17 (14)	0·5 (0.3)
Churu																				
Sujangarh	197	— (—)	0·2 (0·1)	— (—)	96 (49)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	78 (40)	— (—)	— (—)	0·3 (0·1)	— (—)	— (—)	21 (11)	1 (0·4)
Nagaur																				
Nagaur	290	— (—)	36 (12)	— (—)	122 (42)	— (—)	— (—)	0·1 (—)	— (—)	— (—)	— (—)	— (—)	74 (26)	— (—)	— (—)	28 (10)	— (—)	— (—)	29 (10)	0·5 (0·2)
Jodhpur																				
Bilara	203	— (—)	3 (1)	— (—)	95 (47)	0·2 (0·1)	— (—)	12 (6)	2 (1)	0·4 (0·2)	0·1 (0·1)	— (—)	19 (9)	— (—)	— (—)	20 (10)	0·4 (0·2)	— (—)	48 (24)	2.5 (1·2)
Churu																				
Rajgarh	190	— (—)	0·4 (0·3)	— (—)	80 (42)	— (—)	— (—)	0·2 (0·1)	0·1 (—)	— (—)	35 (18)	— (—)	43 (23)	— (—)	— (—)	1 (0·4)	— (—)	— (—)	31 (16)	1 (0·4)

Pali																				
Jaitaran	82	— (—)	4 (5)	— (—)	35 (42)	1 (1)	— (—)	4 (5)	2 (2)	0·1 (0·1)	0·2 (0·2)	— (—)	4 (5)	— (—)	1 (1)	12 (15)	0·2 (0·2)	— (—)	17 (20)	2 (3
Sojat	76	— (—)	25 (33)	— (—)	26 (35)	2 (2)	— (—)	3 (3)	1 (2)	0·4 (1)	— (—)	— (—)	1 (2)	— (—)	0·1 (0·1)	14 (18)	0·2 (0·3)	— (—)	1 (1)	2 (3
Pali	105	— (—)	23 (22)	— (—)	46 (43)	1 (1)	— (—)	3 (3)	1 (1)	0·1 (0·1)	— (—)	— (—)	1 (1)	— (—)	— (—)	19 (18)	0·2 (0·2)	— (—)	10 (10)	1 (1)
Nagaur																				
Merta	158	— (—)	27 (17)	— (—)	67 (43)	0·2 (0·1)	— (—)	6 (3)	1 (1)	— (—)	0·1 (0·1)	— (—)	12 (8)	— (—)	3 (2)	18 (11)	0·3 (0·2)	— (—)	22 (14)	1 (0·3)
Pali																				
Raipur	44	— (—)	0·3 (1)	— (—)	18 (40)	3 (7)	— (—)	3 (8)	1 (3)	1 (1)	4 (1)	— (—)	3 (7)	— (—)	0·1 (0·3)	5 (12)	0·4 (1)	— (—)	7 (15)	1·6 (3·5)
Ganganagar																				
Bhadra	167	— (—)	1 (0.4)	— (—)	46 (27)	— (—)	— (—)	3 (2)	1 (0.4)	— (—)	60 (35)	— (—)	36 (22)	0.4 (.3)	— (—)	1.0 (0.4)	3 (2)	— (—)	14 (9)	4 (2)
Sikar																				
Sri-Madhopur	108	— (—)	1 (1)	— (—)	32 (31)	— (—)	— (—)	4 (4)	8 (7)	— (—)	2 (2)	— (—)	46 (42)	— (—)	1 (1)	2 (1)	— (—)	— (—)	12 (11)	— (—)
Churu																				
Ratangarh	127	— (—)	— (—)	— (—)	51 (40)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	52 (41)	— (—)	— (—)	0·1 (·1)	— (—)	— (—)	24 (19)	— (—)
Churu	121	— (—)	— (—)	— (—)	42 (34)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	46 (38)	— (—)	— (—)	— (—)	— (—)	— (—)	33 (28)	— (—)
Taranagar	156	— (—)	— (—)	— (—)	52 (34)	— (—)	— (—)	0·1 (—)	— (—)	— (—)	7 (4)	— (—)	53 (34)	— (—)	— (—)	0·2 (0·1)	— (—)	— (—)	43 (28)	— (—)
Pali																				
Kharchi	59	— (—)	8 (13)	— (—)	14 (24)	3 (5)	— (—)	3 (6)	3 (6)	1 (1)	— (—)	— (—)	1 (2)	— (—)	— (—)	9 (15)	2 (3)	— (—)	14 (23)	1 (2)
Sirohi																				
Sheoganj	22	— (—)	1 (6)	— (—)	1 (6)	0·3 (1)	— (—)	4 (17)	2 (9)	1 (5)	— (—)	— (—)	4 (17)	— (—)	0·2 (1)	5 (20)	1 (3)	— (—)	3 (15)	— (—)
	Rainfall Zone—IV			..				..			..			..			*Rainfall Pattern—E_4 (C_2 D_2)E_4*			
Udaipur																				
Bhim	12	0·1 (1)	1 (7)	— (—)	0·2 (2)	7 (55)	— (—)	0·3 (2)	1 (7)	0·1 (1)	0·1 (1)	— (—)	2 (14)	0·1 (1)	0·4 (4)	0·3 (2)	0·1 (1)	— (—)	0·3 (2)	— (—)
Deogarh	11	— (—)	0·2 (2)	— (—)	0·1 (1)	5 (48)	— (—)	0·2 (2)	1 (6)	0·1 (—)	— (—)	— (—)	2 (14)	0·1 (1)	3 (13)	1 (8)	0·2 (2)	— (—)	0·2 (2)	— (—)
Amet	14	— (—)	1 (7)	— (—)	— (—)	6 (43)	— (—)	1 (7)	1 (7)	— (—)	0·1 (1)	— (—)	1 (7)	0·2 (1)	1 (7)	1 (9)	1 (8)	— (—)	0·4 (3)	1 (—)
Rajsamand	20	— (—)	1 (4)	— (—)	0·1 (0·4)	8 (40)	— (—)	2 (10)	2 (8)	— (—)	0·4 (2)	— (—)	1 (6)	1 (3)	1 (4)	1 (7)	1 (7)	— (—)	1 (7)	0·5 (2)
Bhilwara																				
Raipur .	17	— (—)	1 (5)	— (—)	0·1 (0·4)	6 (37)	— (—)	1 (6)	2 (9)	— (—)	·3 (2)	— (—)	1 (8)	0·1 (1)	1 (7)	1 (7)	2 (10)	— (—)	1 (5)	0·5 (3)
Asind	37	— (—)	3 (8)	— (—)	0·1 (0·2)	14 (37)	— (—)	2 (6)	5 (13)	— (—)	1 (3)	— (—)	2 (6)	— (—)	1 (3)	2 (5)	4 (11)	— (—)	2 (7)	0·4 (1)

APPENDIX 4—(*Contd.*)

(thousand hectares)

District/taluk	Gca	Paddy	Jowar Kharif	Jowar Rabi	Bajra	Maize	Ragi	Wheat	Barley	Mt.	Gram	Tur	Pu	Sugarcane	Groundnut	O	Cotton	L	Fodder	Mc.
Rainfall Zone—IV (concld.)							.•			..		..			..	*Rainfall Pattern—E4 (C_2 D_2) E_4*				
Mandal	34	— (—)	0·2 (0·4)	— (—)	0·1 (0·2)	15 (45)	— (—)	2 (7)	3 (9)	— (—)	1 (2)	— (—)	3 (8)	0·3 (1)	1 (4)	2 (7)	3 (8)	— (—)	2 (6)	1 (3)
Hurda	28	— (—)	2 (8)	— (—)	0·3 (1)	6 (22)	— (—)	3 (10)	3 (10)	— (—)	1 (4)	— (—)	0·3 (1)	— (—)	1 (4)	2 (9)	2 (8)	— (—)	5 (17)	2 (6)
Ajmer																				
Bewar	57	— (—)	14 (25)	— (—)	6 (11)	16 (29)	— (—)	3 (5)	4 (7)	1 (2)	2 (3)	— (—)	2 (3)	— (—)	1 (1)	3 (6)	2 (4)	— (—)	1 (2)	1·4 (2)
Jaipur																				
Kotputli	63	— (—)	1 (1)	— (—)	21 (34)	0·2 (0·4)	— (—)	5 (8)	6 (10)	— (—)	16 (25)	— (—)	7 (11)	— (—)	— (—)	2 (4)	— (—)	— (—)	4 (6)	0·4 (1)
Bairath .	58	— (—)	0·1 (0·2)	— (—)	20 (34)	2 (3)	— (—)	5 (8)	6 (11)	— (—)	6 (10)	— (—)	15 (25)	0·1 (0·2)	1 (2)	1 (1)	— (—)	— (—)	3 (5)	— (—)
Amber .	97	— (—)	0·1 (0·1)	— (—)	33 (34)	1 (1)	— (—)	8 (8)	8 (9)	0·1 (0·1)	3 (3)	— (—)	28 (29)	— (—)	1 (1)	0·2 (0·2)	— (—)	— (—)	12 (12)	3 (3)
Jamwa Ramgarh	66	— (—)	1 (1)	— (—)	25 (38)	4 (7)	— (—)	5 (7)	8 (13)	— (—)	3 (5)	— (—)	14 (21)	0·2 (0·3)	1 (1)	1 (1)	— (—)	— (—)	3 (5)	0·4 (1)
Phulera	95	— (—)	1 (1)	— (—)	40 (42)	1 (1)	— (—)	4 (5)	8 (8)	— (—)	1 (1)	— (—)	22 (23)	— (—)	0·1 (0·1)	2 (2)	— (—)	— (—)	15 (16)	0·5 (0·5)
Jaipur	33	— (—)	0·1 (·2)	— (—)	15 (44)	0·4 (1)	— (—)	3 (8)	3 (10)	— (—)	0·1 (0·4)	— (—)	6 (18)	— (—)	— (—)	0·1 (0·3)	— (—)	— (—)	4 (12)	2 (6)
Sanganer	51	— (—)	— (—)	— (—)	22 (44)	1 (2)	— (—)	5 (9)	6 (12)	— (—)	0·2 (0·4)	— (—)	8 (16)	— (—)	0·3 (1)	1 (1)	— (—)	— (—)	5 (11)	2 (4)
Ajmer																				
Ajmer	106	— (—)	28 (27)	— (—)	33 (31)	9 (8)	— (—)	6 (6)	4 (4)	0·2 (0·2)	1 (1)	— (—)	6 (6)	0·2 (0·2)	2 (2)	8 (7)	2 (2)	— (—)	3 (3)	3·2 (3)
Jaipur																				
Chaksu	53	— (—)	3 (6)	— (—)	17 (32)	3 (6)	— (—)	4 (8)	7 (13)	— (—)	4 (8)	— (—)	3 (6)	— (—)	3 (6)	3 (6)	— (—)	— (—)	3 (6)	2 (3)
Phagi	71	— (—)	10 (15)	— (—)	14 (20)	6 (8)	— (—)	5 (6)	7 (9)	— (—)	8 (11)	— (—)	4 (5)	— (—)	1 (2)	10 (14)	— (—)	— (—)	5 (8)	1·4 (2)
Dudu	72	— (—)	16 (23)	— (—)	13 (17)	8 (12)	— (—)	4 (6)	6 (8)	— (—)	3 (4)	— (—)	4 (5)	— (—)	0·1 (0·1)	14 (19)	— (—)	— (—)	3 (5)	0·5 (1)
Ajmer																				
Kishangarh	86	— (—)	23 (27)	— (—)	22 (26)	8 (9)	— (—)	3 (3)	5 (5)	— (—)	1 (1)	— (—)	8 (10)	— (—)	0·1 (0·1)	11 (13)	1 (1)	— (—)	2 (3)	1·5 (2)
Sarwar .	60	— (—)	20 (34)	— (—)	1 (1)	7 (13)	— (—)	7 (11)	4 (7)	— (—)	7 (12)	— (—)	0·4 (1)	— (—)	3 (5)	6 (9)	3 (5)	— (—)	1 (1)	0·6 (1)
Tonk																				
Malpura	93	— (—)	24 (26)	— (—)	7 (8)	9 (10)	— (—)	14 (15)	8 (8)	— (—)	15 (16)	— (—)	0·4 (0·4)	— (—)	0·4 (0·4)	9 (10)	1 (1)	— (—)	3 (4)	2 (2)

Alwar																				
Behror	78	— (—)	1 (1)	— (—)	29 (37)	— (—)	— (—)	2 (3)	4 (5)	— (—)	26 (32)	— (—)	4 (1)	— (—)	— (—)	6 (8)	— (—)	— (—)	10 (13)	— (—)
Mandawar	56	— (—)	1 (2)	— (—)	18 (32)	— (—)	— (—)	4 (7)	4 (7)	— (—)	15 (28)	0·1 (0·2)	0·3 (0·4)	— (—)	— (—)	9 (16)	— (—)	— (—)	4 (7)	0·2 (0·4)
Kishangarh	75	— (—)	0·4 (1)	— (—)	22 (29)	— (—)	— (—)	11 (14)	5 (7)	— (—)	20 (27)	0·1 (0·2)	0·4 (1)	0·1 (0·1)	— (—)	11 (14)	— (—)	— (—)	5 (7)	— (—)
Tijara	60	— (—)	0·2 (·4)	— (—)	19 (31)	— (—)	— (—)	8 (13)	4 (7)	— (—)	19 (31)	— (—)	1 (1)	0·1 (0·1)	0·2 (0·3)	5 (8)	— (—)	— (—)	5 (8)	— (—)
Sawai Madhopur																				
Todabhim	49	0·2 (0·4)	2 (4)	— (—)	(17 35)	0·2 (0·3)	— (—)	7 (13)	3 (6)	— (—)	12 (25)	0·1 (0·2)	2 (4)	0·2 (0·4)	1 (2)	1 (3)	— (—)	— (—)	3 (6)	0·3 (0·6)
Alwar																				
Bansur	49	— (—)	— (—)	— (—)	16 (33)	0·2 (0·3)	— (—)	4 (7)	4 (7)	— (—)	10 (21)	0·1 (0·1)	7 (15)	— (—)	— (—)	2 (5)	— (—)	— (—)	5 (11)	0·3) (0·6)
Thanagazi	30	— (—)	1 (3)	— (—)	7 (24)	4 (15)	— (—)	2 (8)	4 (13)	— (—)	5 (16)	0·1 (0·3)	1 (4)	0·1 (0·3)	— (—)	1 (4)	— (—)	— (—)	3 (9)	1·4 (4)
Jaipur																				
Bassi	46	— (—)	1 (3)	— (—)	16 (35)	2 (4)	— (—)	5 (10)	6 (14)	— (—)	1 (2)	— (—)	8 (18)	— (—)	3 (5)	1 (1)	— (—)	— (—)	2 (5)	1·6 (3)
Dausa	61	— (—)	4 (6)	— (—)	15 (24)	3 (5)	— (—)	7 (12)	8 (13)	0·1 (0·1)	6 (11)	0·3 (1)	7 (12)	— (—)	4 (6)	1 (2)	— (—)	— (—)	4 (6)	1·2 (1·6)
Baswa	44	— (—)	1 (3)	— (—)	14 (31)	1 (3)	— (—)	4 (9)	5 (13)	0·1 (0·2)	6 (13)	1 (1)	8 (18)	— (—)	— (—)	1 (1)	— (—)	— (—)	3 (6)	0·3 (1)
Sikrai	39	— (—)	0·1 (0.3)	— (—)	11 (27)	1 (1)	— (—)	5 (14)	5 (12)	— (—)	3 (9)	0·2 (1)	7 (19)	— (—)	3 (8)	1 (2)	— (—)	— (—)	2 (6)	0·3 (1)
Bharatpur																				
Weir	55	0·1 (0·2)	1 (2)	— (—)	14 (25)	— (—)	— (—)	9 (17)	2 (4)	— (—)	12 (22)	0·3 (1)	2 (3)	0·1 (0·2)	4 (7)	5 (9)	— (—)	— (—)	5 (9)	0·2 (0·4)
Sawai Madhopur																				
Mahwa	44	— (—)	4 (10)	— (—)	12 (28)	0·1 (0·2)	— (—)	5 (12)	4 (8)	— (—)	11 (25)	0·1 (0·2)	2 (5)	0·1 (0·1)	0·4 (1)	2 (4)	— (—)	— (—)	2 (5)	1 (2)
Nadauti	47	1 (2)	9 (19)	— (—)	8 (16)	1 (2)	— (—)	10 (21)	3 (7)	— (—)	11 (24)	0·2 (1)	0·4 (1)	0·2 (0·3)	0·4 (1)	2 (3)	— (—)	— (—)	1 (2)	0·2 (0·4)
Alwar																				
Lachhmangarh	122	0·1 (—)	7 (6)	— (—)	25 (20)	0·4 (0·3)	— (—)	14 (11)	9 (8)	— (—)	23 (27)	1 (1)	7 (6)	0·1 (0·1)	0·3 (0·3)	16 (13)	— (—)	— (—)	9 (7)	— (—)
Alwar	122	0·3 (0·3)	6 (5)	— (—)	22 (18)	1 (1)	— (—)	16 (13)	7 (6)	— (—)	35 (29)	2 (1)	2 (1)	0·2 (0·2)	0·1 (0·1)	18 (15)	— (—)	— (—)	11 (9)	2 (1·6)
Bharatpur																				
Kaman	75	1 (1)	7 (9)	— (—)	13 (18)	0·1 (0·2)	— (—)	12 (15)	4 (6)	0·2 (0·3)	24 (32)	— (—)	1 (1)	1 (1)	— (—)	8 (10)	— (—)	— (—)	4 (6)	— (—)
Nagar	54	2 (3)	3 (6)	— (—)	7 (14)	— (—)	— (—)	7 (14)	3 (6)	— (—)	16 (30)	— (—)	2 (4)	0·3 (0·4)	— (—)	7 (12)	— (—)	— (—)	5 (8)	1·8 (3)
Nadbai	49	·4 (1)	2 (5)	— (—)	9 (17)	— (—)	— (—)	7 (15)	2 (5)	— (—)	13 (26)	0·2 (0·4)	1 (2)	0·2 (0·3)	3 (5)	7 (15)	— (—)	— (—)	3 (6)	1 2)
Alwar																				
Rajgarh	56	— (—)	7 (13)	— (—)	7 (13)	6 (11)	— (—)	5 (9)	7 (12)	— (—)	14 (24)	1 (2)	2 (3)	0·1 (0·1)	— (—)	3 (5)	— (—)	— (—)	4 (7)	0·3 (1)

APPENDIX 4—(*Contd.*)

(thousand hectares)

Ditsrict/taluk	Gca	Paddy	Jowar Kharif	Jowar Rabi	Bajra	Maize	Ragi	Wheat	Barley	Mt	Gram	Tur	Pu	Sugarcane	Groundnut	O	Cotton	L	Fodder	M
	Rainfall Zone—VI					..		..			..			..		*Rainfall Pattern—$E_4(B_1C_1E_2)E_4$*				
Udaipur																				
Kotra	20	0·4 (2)	1 (3)	— (—)	— (—)	13 (68)	— (—)	1 (4)	0·1 (0·3)	1 (7)	1 (3)	0·1 (0·3)	0·2 (1)	0·1 (0·4)	— (—)	1 (7)	0·1 (0·4)	— (—)	0·3 (2)	0·3 (1·4)
Kumbhalgarh	11	neg (3)	neg (3)	— (—)	— (—)	7 (60)	— (—)	1 (5)	0·4 (4)	1 (6)	— (—)	— (—)	0·4 (4)	0·4 (4)	neg (1)	1 (5)	— (—)	— (—)	neg (3)	0·2 (2)
Gogunda	14	1 (4)	— (—)	— (—)	— (—)	8 (56)	— (—)	1 (10)	1 (4)	1 (7)	0·4 (3)	— (—)	0·4 (3)	0·4 (4)	0·1 (0·4)	0·4 (3)	— (—)	— (—)	0·2 (2)	0·5 (3·5)
Girwa	30	0·2 (1)	1 (5)	— (—)	— (—)	16 (53)	— (—)	3 (10)	3 (11)	0·3 (1)	0·4 (1)	— (—)	0·4 (2)	1 (3)	0·1 (0·3)	1 (3)	— (—)	— (—)	1 (3)	2 (6)
Mavli	28	— (—)	0·4 (2)	— (—)	— (—)	13 (46)	— (—)	2 (8)	2 (8)	— (—)	0·3 (1)	— (—)	1 (2)	1 (2)	4 (14)	2 (6)	1 (5)	— (—)	2 (6)	— (—)
Phalasia																				
Dhariawad	34	1 (2)	1 (3)	— (—)	— (—)	18 (54)	— (—)	3 (8)	2 (7)	2 (5)	2 (5)	— (—)	1 (3)	0·1 (0·2)	0·4 (1)	2 (7)	0·1 (0·2)	— (—)	0·2 (—)	1·2 (3·4)
Nathdwara	19	0·2 (1)	0·3 (2)	— (—)	— (—)	11 (59)	— (—)	1 (7)	2 (8)	0·2 (1)	0·1 (1)	— (—)	1 (5)	0·4 (2)	0·3 (2)	1 (4)	0·2 (1)	— (—)	1 (4)	0·6 (3)
Kherwara	28	5 (16)	5 (17)	— (—)	— (—)	11 (40)	— (—)	2 (6)	1 (4)	2 (8)	1 (5)	— (—)	1 (3)	— (—)	— (—)	0·3 (1)	— (—)	— (—)	— (—)	— (—)
Sirohi																				
Pindwara	32	— (—)	0·3 (1)	— (—)	2 (7)	12 (38)	— (—)	3 (11)	1 (3)	2 (7)	0·1 (0·3)	0·1 (0·2)	4 (12)	— (—)	0·2 (0·3)	3 (9)	0·4 (1)	— (—)	3 (9)	0·4 (1·2)
Udaipur																				
Railmagra	26	— (—)	5 (19)	— (—)	— (—)	7 (29)	— (—)	3 (11)	1 (4)	— (—)	0·3 (1)	— (—)	0·3 (1)	1 (2)	2 (7)	1 (4)	3 (11)	— (—)	2 (8)	0·8 (3)
Pali																				
Desuri	49	— (—)	1 (3)	— (—)	2 (4)	7 (15)	— (—)	2 (3)	3 (6)	0·2 (0·4)	— (—)	— (—)	3 (6)	— (—)	— (—)	7 (15)	1 (3)	— (—)	21 (42)	1·4 (3)
Bali	80	— (—)	5 (6)	— (—)	12 (15)	12 (15)	— (—)	5 (7)	5 (6)	— (—)	— (—)	0·2 (0·3)	5 (6)	— (—)	0·4 (1)	16 (20)	3 (4)	— (—)	15 (19)	1 (1)
Sirohi																				
Sirohi	34	— (—)	1 (3)	— (—)	11 (31)	0·4 (1)	— (—)	3 (9)	0·2 (1)	2 (6)	— (–)	— (–)	7 (23)	— (—)	— (—)	6 (17)	0·2 (1)	— (—)	3	0·3)
Redhar	41	— (—)	1 (2)	1 (2)	10 (24)	1 (3)	— (—)	4 (11)	0·1 (0·2)	7 (18)	— (—)	— (—)	5 (12)	— (—)	0·1 (0·2)	5 (13)	0·4 (1)	— (—)	6 (13)	0·2 (0·4)
	Rainfall Zone—VII					..		..			..			..		*Rainfall Pattern—$E_4(B_2E_2)E_4$*				
Sawai Madhopur																				
Gangapur	49	2 (3)	2 (5)	— (—)	12 (25)	0·4 (1)	— (—)	9 (19)	4 (7)	— (—)	5 (10)	0·3 (0·4)	1 (2)	0·1 (·2)	9 (18)	1 (3)	— (—)	— (—)	1 (3)	1·8 (4)
Malarnachor (Baoli)	69	0·1 (0·1)	11 (16)	— (—)	12 (18)	1 (1)	— (—)	10 (15)	5 (8)	— (—)	12 (18)	— (—)	3 (4)	0·2 (0·3)	6 (9)	6 (8)	— (—)	— (—)	2 (3)	— (—)

Tonk																				
Nawai	66	— (—)	7 (11)	— (—)	16 (24)	2 (4)	— (—)	9 (13)	8 (12)	— (—)	6 (8)	0·1 (0·1)	1 (2)	— (—)	7 (10)	5 (8)	— (—)	— (—)	3 (5)	2 (3)
Jaipur																				
Lalsot	56	— (—)	0·1 (0·2)	— (—)	15 (26)	3 (5)	— (—)	7 (12)	7 (13)	0·1 (0·3)	1 (2)	0·3 (1)	7 (12)	— (—)	10 (17)	1 (3)	— (—)	— (—)	4 (7)	1 (1·8)
Bhilwara																				
Mandalgarh	38	0·1 (0·3)	1 (2)	— (—)	— (—)	16 (42)	— (—)	8 (22)	3 (8)	— (—)	1 (2)	— (—)	1 (2)	0·4 (1)	3 (7)	2 (6)	1 (2)	— (—)	1 (3)	1 (3)
Banera	23	— (—)	3 (12)	— (—)	0·1 (0·3)	8 (36)	— (—)	2 (8)	2 (8)	— (—)	1 (5)	— (—)	0·4 (2)	— (—)	1 (3)	2 (11)	3 (13)	— (—)	0·3 (2)	— (—)
Kotri	30	— (—)	0·4 (1)	— (—)	— (—)	12 (41)	— (—)	3 (11)	3 (10)	— (—)	1 (3)	— (—)	0·4 (2)	0·3 (1)	1 (3)	4 (12)	2 (6)	— (—)	2 (8)	0·8 (2·6)
Bhilwara	34	— (—)	1 (2)	— (—)	— (—)	14 (41)	— (—)	4 (11)	3 (8)	— (—)	1 (3)	— (—)	1 (3)	0·3 (1)	0·4 (1)	3 (9)	3 (10)	— (—)	2 (7)	1·3 (4)
Sahara	24	— (—)	2 (9)	— (—)	0·1 (0·4)	8 (34)	— (—)	2 (6)	1 (5)	— (—)	1 (3)	— (—)	1 (3)	0·2 (1)	1 (5)	2. (9)	3 (14)	— (—)	2 (9)	0·5 (2)
Bundi																				
Hindoli	40	0·1 (0·4)	1 (3)	— (—)	0·2 (1)	10 (25)	— (—)	9 (22)	3 (8)	— (—)	4 (11)	— (—)	1 (2)	3 (7)	0·3 (1)	2 (6)	— (—)	— (—)	6 (14)	— (—)
Bhilwara																				
Shahpura	57	— (—)	11 (19)	— (—)	0·2 (0·4)	12 (21)	— (—)	12 (20)	6 (11)	0·1 (0·1)	2 (4)	— (—)	0·2 (0·4)	— (—)	2·4 (4)	6 (10)	3 (6)	— (—)	2 (4)	— (—)
Jahazpur	47	— (—)	7 (14)	— (—)	1 (2)	11 (24)	— (—)	7 (15)	5 (10)	— (—)	4 (9)	— (—)	0·4 (1)	0·4 (1)	4 (9)	3 (7)	1 (2)	— (—)	2 (4)	0·8 (1·8)
Chittaurgarh																				
Rashmi	23	— (—)	5 (23)	— (—)	— (—)	5 (22)	— (—)	3 (12)	1 (3)	— (—)	1 (3)	— (—)	0·1 (1)	0·1 (1)	2 (7)	1 (6)	4 (16)	— (—)	1 (5)	0·2 (1)
Gangrar	23	— (—)	1 (6)	— (—)	— (—)	8 (34)	— (—)	4 (19)	1 (6)	— (—)	1 (4)	— (—)	0·3 (1)	0·4 (2)	2 (8)	2 (7)	2 (7)	— (—)	1 (4)	0. 5 (2)
Begun	44	— (—)	4 (9)	— (—)	— (—)	13 (29)	— (—)	9 (20)	2 (4)	— (—)	2 (4)	— (—)	3 (7)	0·3 (1)	4 (9)	3 (7)	1 (2)	— (—)	1 (3)	2 (5)
Tonk																				
Tonk	108	— (—)	32 (30)	— (—)	9 (8)	2 (2)	— (—)	19 (18)	10 (9)	— (—)	21 (19)	— (—)	1 (1)	0·4 (0·4)	1 (1)	6 (6)	0·1 (0·1)	— (—)	4 (3)	3 (3)
Uniara	70	— (—)	25 (36)	— (—)	3 (4)	1 (1)	— (—)	19 (28)	4 (6)	— (—)	7 (10)	— (—)	2 (3)	0·4 (1)	0·1 (0.1)	5 (7)	— (—)	— (—)	1 (2)	1 (2)
Todarai Singh	69	— (—)	22 (31)	— (—)	3 (5)	6 (9)	— (—)	13 (19)	5 (7)	— (—)	13 (19)	— (—)	0·1 (0·1)	0.2 (0·2)	0.3 (0.4)	4 (6)	1 (1)	— (—)	1 (1)	1 (1.4)
Deoli	75	— (—)	24 (32)	— (—)	5 (6)	5 (7)	— (—)	15 (20)	6 (8)	— (—)	11 (15)	— (—)	0·1 (0·2)	1 (1)	1 (2)	3 (4)	1 (1)	— (—)	2 (3)	0·7 (1)
Ajmer																				
Kekri	109	— (—)	30 (28)	— (—)	2 (2)	15 (14)	— (—)	18 (17)	8 (8)	0·1 (0·1)	10 (10)	— (—)	2 (1)	0·1 (0·1)	5 (4)	9 (8)	4 (4)	— (—)	5 (4)	0·4 (0·3)
Sawai Madhopur																				
Bamanwas	53	3 (6)	5 (9)	— (—)	8 (15)	1 (2)	— (—)	10 (19)	7 (14)	— (—)	7 (12)	0·3 (1)	0·4 (1)	0·1 (0·1)	6 (12)	3 (6)	— (—)	— (—)	1 (2)	0·9 (1·5)

APPENDIX 4—(*Contd.*)

(thousand hectares)

District/taluk	Goa	Paddy	Jowar Kharif	Jowar Rabi	Bajra	Maize	Ragi	Wheat	Barley	Mt	Gram	Tur	Pu	Sugarcane	Groundnut	O	Cotton	L	Fodder	Mc.
	Rainfall Zone—VIII					..			..			..				*Rainfall Pattern—$E_4(B_2C_1E_1)E_4$*				
Udaipur																				
Salumbar	37	1 (3)	0·1 (0·4)	— (—)	— (—)	17 (46)	— (—)	3 (9)	3 (8)	1 (4)	2 (6)	— (—)	2 (5)	0·2 (1)	— (—)	3 (8)	— (—)	— (—)	2 (5)	1·7 (4·8
Sarada	27	1 (3)	1 (3)	— (—)	— (—)	14 (51)	— (—)	2 (7)	4 (15)	1 (4)	1 (3)	— (—)	1 (5)	0·2 (1)	— (—)	1 (5)	0·1 (0·2)	— (—)	1 (3)	— (—)
Lasadia (Jhadol)	23	2 (8)	1 (4)	— (—)	— (—)	10 (45)	— (—)	2 (10)	1 (4)	3 (12)	2 (8)	— (—)	1 (4)	0·2 (1)	0·1 (0·2)	1 (4)	— (—)	— (—)	0·1 (0·4)	— (—)
Dungarpur																				
Dungarpur	68	12 (18)	2 (4)	— (—)	1 (2)	27 (40)	— (—)	5 (8)	1 (1)	8 (12)	4 (6)	1 (2)	1 (2)	1 (1)	0·1 (0·2)	2 (3)	0·2 (0·4)	— (—)	0·4 (1)	— (—)
Aspur	29	3 (10)	— (—)	— (—)	— (—)	11 (38)	— (—)	3 (11)	1 (4)	2 (8)	3 (12)	1 (—)	1 (4)	0·3 (1)	— (—)	2 (6)	— (—)	— (—)	1 (3)	1 (3)
Sagwara	50	10 (20)	1 (1)	— (—)	— (—)	13 (26)	— (—)	5 (11)	1 (2)	8 (16)	7 (14)	0·2 (0·4)	2 (3)	1 (1)	— (—)	2 (3)	0·1 (0.1)	— (—)	1 (2)	— (—)
Banswara																				
Garhi	38	8 (22)	— —)	— (—)	— (—)	8 (22)	— (—)	3 (9)	1 (2)	4 (11)	6 (16)	1 (2)	2 (5)	1 (2)	— (—)	2 (5)	1 (2)	— (—)	1 (2)	— (—)
Bagidora	56	10 (17)	1 (1)	— (—)	— (—)	14 (25)	— (—)	3 (5)	1 (1)	6 (11)	9 (17)	2 (4)	1 (2)	0·1 (0·1)	0·3 (1)	4 (7)	4 (7)	— (—)	— (—)	1 (2)
Chittaurgarh																				
Chittaurgarh	30	— (—)	3 (11)	— (—)	— (—)	8 (26)	— (—)	8 (26)	1 (3)	— (—)	1 (3)	— (—)	0·4 (2)	1 (3)	3 (11)	1 (4)	0·4 (1)	— (—)	1 (4)	2 (6)
Kapasan	41	0·3 (1)	6 (14)	— (—)	— (—)	12 (31)	— (—)	6 (14)	1 (3)	— (—)	1 (3)	— (—)	0·4 (1)	1 (2)	4 (9)	3 (7)	4 (9)	— (—)	2 (4)	1 (2)
Bhadesar	23	— (—)	3 (13)	— (—)	— (—)	6 (28)	— (—)	4 (18)	1 (3)	— (—)	0·2 (1)	— (—)	0·4 (2)	0·2 (1)	4 (16)	1 (6)	1 (6)	— (—)	1 (3)	0·8 (3)
Nimbahera	42	0·1 (0·3)	9 (22)	— (—)	— (—)	6 (14)	— (—)	8 (18)	0·3 (1)	— (—)	1 (3)	0·1 (1)	2 (6)	1 (1)	7 (18)	1 (3)	1 (2)	— (—)	1 (3)	4 (9)
Dungla	28	— (—)	7 (24)	— (—)	— (—)	5 (18)	— (—)	4 (16)	1 (2)	— (—)	0·4 (2)	— (—)	1 (5)	0·2 (1)	3 (9)	2 (8)	2 (8)	— (—)	1 (2)	1·7 (5)
Bari Sadri	27	— (—)	4 (16)	— (—)	— (—)	5 (20)	— (—)	5 (19)	1 (2)	— (—)	1 (3)	— (—)	2 (8)	0.2 (1)	3 (11)	1 (4)	1 (4)	— (—)	1 (3)	3 (9)
Chhoti Sadri	33	0·1 (0·2)	6 (18)	— (—)	— (—)	7 (21)	— (—)	4 (13)	0·3 (1)	— (—)	1 (4)	0·1 (0·3)	5 (15)	0·1 (0·3)	5 (14)	1 (2)	0·2 (1)	— (—)	0·4 (1)	2·8 (9)
Udaipur																				
Vallabhipur	45	— (—)	7 (16)	— (—)	— (—)	13 (30)	— (—)	6 (13)	3 (7)	0·1 (0·2)	1 (1)	— (—)	2 (4)	1 (2)	5 (11)	3 (6)	2 (4)	— (—)	1 (3)	1·2 (2·6)
Kota																				
Ladpura	48	2 (4)	11 (23)	— (—)	— (—)	2 (5)	— (—)	18 (37)	0·4 (1)	— (—)	6 (13)	— (—)	2 (3)	0·2 (0·4)	0·2 (0·4)	2 (5)	— (—)	— (—)	1 (3)	2·8 (5·5)
Digod	69	1 (1)	19 (28)	— (—)	0·1 (0·1)	0·1 (0·1)	— (—)	27 (40)	1 (1)	— (—)	10 (15)	— (—)	2 (2)	0·1 (0·1)	1 (1)	5 (8)	— (—)	— (—)	1 (1)	2 (3)

Bundi																				
Bundi	83	4 (5)	16 (19)	— (—)	— (—)	8 (10)	— (—)	25 (30)	2 (3)	— (—)	15 (18)	0·1 (0·1)	3 (3)	2 (3)	0·2 (0·3)	4 (5)	— (—)	— (—)	3 (3)	1 (1·4)
Bharatpur																				
Rupbas	53	0·2 (0·4)	0·4 (1)	— (—)	9 (17)	— (—)	— (—)	15 (29)	1 2)	— (—)	10 (18)	0·2 (0·(	3 5)	0·4 (1)	3 (6)	7 (13)	— (—)	— (—)	3 (5)	1 (2)
Baseri	33	2 (5)	0·4 (1)	— (—)	9 (27)	— (—)	— (—)	8 (25)	1 (2)	— (—)	6 (19)	0·4 (1)	1 (4)	1 (2)	0·3 (1)	3 (10)	— (—)	— (—)	1 (3)	— (—)
Bari	34	1 (2)	0·2 (1)	— (—)	14 (41)	— (—)	— (—)	5 (16)	0·4 (1)	— (—)	4 (13)	1 (4)	1 (4)	0·4 (1)	1 (2)	4 (12)	— (—)	— (—)	1 (3)	— (—)
Rajakhera	28	— (—)	1 (3)	— (—)	9 (31)	— (—)	— (—)	3 (11)	1 (3)	— (—)	8 (27)	1 (4)	1 (2)	0·1 (0·3)	— (—)	5 (17)	— (—)	— (—)	0·2 (1)	— (—)
Dholpur	66	11 (1)	1 (1)	— (—)	20 (31)	— (—)	— (—)	11 (17)	1 (2)	— (—)	13 (20)	1 (2)	2 (4)	1 (1)	0·1 (0·1)	11 (18)	— (—)	— (—)	2 (3)	— —
Sawaimadhopur																				
Hindaun	51	— (—)	1 (1)	— (—)	23 (46)	0·1 (0·2)	— (—)	6 (11)	2 (4)	— (—)	9 (18)	0·2 (1)	2 (5)	0·1 (0·1)	3 (6)	1 (2)	— (—)	— (—)	3 (6)	— (—)
Karauli	48	2 (4)	0·4 (1)	— (—)	23 (48)	0·2 (1)	— (—)	5 (11)	2 (4)	— (—)	4 (9)	0·4 (1)	2 (4)	0·4 (1)	4 (9)	2 (4)	— (—)	— (—)	1 (2)	0·4 (1)
Sapotra	35	1 (3)	1 (4)	— (—)	14 (40)	4 (1)	— (—)	3 (8)	2 (7)	0·1 (0·2)	5 (14)	0·2 (1)	1 (4)	0·3 (1)	3 (9)	2 (5)	— (—)	— (—)	1 (2)	0·6 (1·4)
Bharatpur																				
Bayana	49	0·4 (1)	0·2 (0·4)	— (—)	13 (27)	— (—)	— (—)	10 (20)	1 (3)	— (—)	8 (16)	0·1 (0·2)	3 (6)	1 (1)	4 (8)	4 (8)	— (—)	— (—)	3 (7)	2 (8)
Kota																				
Pipalda	78	— (—)	27 (35)	— (—)	0·3 (0·4)	0·2 (0·2)	— (—)	23 (30)	1 (2)	— (—)	14 (18)	— (—)	2 (2)	0·1 (0·1)	0·3 (0·4)	7 (9)	— (—)	— (—)	1 (1)	1·6 (2)
Ramganjmandi	49	— (—)	20 (41)	— (—)	— (—)	4 (8)	— (—)	8 (16)	1 (1)	— (—)	3 (7)	— (—)	7 (15)	0·1 (0·1)	0·4 (1)	2 (4)	— (—)	— (—)	1 (1)	3 (6)
Bundi																				
Nainwa	56	— (—)	21 (37)	— (—)	0·3 (1)	3 (6)	— (—)	11 (19)	3 (5)	— (—)	9 (16)	— (—)	1 (2)	1 (3)	0·2 (0·3)	4 (7)	— (—)	— (—)	2 (4)	— (—)
Keshoraipatan	80	1 (1)	26 (32)	— (—)	— (—)	0·3 (0·3)	— (—)	26 (32)	1 (1)	— (—)	14 (19)	— (—)	3 (4)	0·4 (1)	0·2 (0·2)	5 (6)	— (—)	(—) (—)	1 (1)	1·4 (2)
Jhalawar																				
Pachpahar	45	— (—)	22 (49)	— (—)	2 (4)	3 (7)	— (—)	4 (9)	0·3 (1)	— (—)	2 (4)	0·4 (1)	3 (7)	0·1 (0·2)	0·4 (1)	1 (3)	4 (9)	— (—)	0·3 (1)	2 (4)
Sawaimadhopur																				
Khandar	32	— (—)	10 (31)	— (—)	5 (16)	0·2 (1)	— (—)	2 (6)	1 (2)	— (—)	2 (6)	— (—)	3 (10)	0·1 (0·2)	0·3 (1)	4 (14)	— (—)	— (—)	3 (10)	0·8 (2·5)
Pratapgarh	104	1 (1)	23 (22)	— (—)	0·1 (0·1)	14 (14)	— (—)	23 (22)	0·2 (0·2)	1 (1)	8 (8)	1 (1)	10 (9)	0·3 (0·3)	5 (5)	2 (2)	3 (3)	— (—)	1 (1)	11 (10)
Bharatpur																				
Bharatpur	90	1 (1)	9 (10)	— (—)	9 (10)	— (—)	— (—)	23 (26)	5 (6)	— (—)	24 (26)	0·4 (1)	3 (3)	1 (1)	1 (1)	7 (8)	— (—)	— (—)	6 (7)	— (—)
Deeg	48	0·1 (0·3)	8 (17)	— (—)	6 (13)	0·1 (0·1)	— (—)	7 (16)	3 (6)	— (—)	14 (28)	0·3 (1)	1 (2)	0·3 (1)	— (—)	5 (11)	— (—)	— (—)	2 (4)	0·7 (1)

APPENDIX 4—(*Contd.*)

(thousand hectares)

District/taluk	Gca	Paddy	Jowar Kharif	Jowar Rabi	Bajra	Maize	Ragi	Wheat	Barley	Mt	Gram	Tur	Pu	Sugarcane	Groundnut	O	Cotton	L	Fodder	Mc.
Rainfall Zone—IX						..				..			..			*Rainfall Pattern—$E_4(A_1B_1C_1E_1)E_4$*				
Kota																				
Mangrol	77	0·3 (0·4)	27 (35)	— (—)	0·4 (1)	0·1 (0·2)	— (—)	23 (30)	1 (1)	— (—)	14 (19)	— (—)	2 (3)	0·3 (0·4)	1 (1)	5 (6)	— (—)	— (—)	1 (1)	1·5 (2)
Baran	52	0·4 (1)	20 (38)	— (—)	— (—)	0·3 (1)	— (—)	13 (25)	0·4 (1)	— (—)	9 (17)	— (—)	1 (2)	0·1 (0·2)	0·3 (1)	2 (4)	— (—)	— (—)	1 (2)	4 (8)
Sangod	68	— (—)	23 (34)	— (—)	— (—)	1 (1)	— (—)	16 (23)	0·4 (1)	— (—)	10 (15)	— (—)	5 (8)	0·1 (0·2)	0·4 (1)	4 (7)	— (—)	— (—)	1 (1)	6·7 (9)
Shahbad	26	0·4 (2)	6 (23)	— (—)	2 (8)	0·4 (1)	— (—)	9 (35)	0·1 (0·3)	0·3 (1)	1 (2)	— (—)	1 (3)	0·2 (1)	— (—)	4 (16)	— (—)	— (—)	— (—)	2 (8)
Rainfall Zone—X						..				..			..			*Rainfall Pattern—$E_4(A_2C_1E_1)E_4$*				
Kota																				
Kishanganj	38	2 (6)	13 (33)	— (—)	— (—)	1 (1)	— (—)	12 (31)	0·3 (1)	— (—)	3 (7)	— (—)	1 (3)	0·4 (1)	0·1 (0·3)	3 (7)	— (—)	— (—)	0·2 (1)	3 (9)
Atru	52	0·2 (0·4)	19 (36)	— (—)	— (—)	1 (2)	— (—)	15 (29)	0·3 (1)	— (—)	6 (13)	— (—)	1 (3)	0·1 (0·3)	0·3 (1)	2 (3)	— (—)	— (—)	1 (1)	6 (10)
Chhabra	42	0·1 (0·2)	15 (36)	— (—)	— (—)	3 (7)	— (—)	12 (30)	0·3 (1)	— (—)	5 (11)	— (—)	1 (3)	0·1 (0·2)	0·1 (0·2)	2 (5)	— (—)	— (—)	0·2 (1)	3 (6)
Chhipabarod	37	— (—)	13 (36)	— (—)	— (—)	5 (13)	— (—)	7 (19)	0·4 (1)	— (—)	5 (13)	0·1 (0·2)	1 (2)	0·1 (0·3)	0·3 (1)	2 (5)	— (—)	— (—)	0·3 (1)	3 (9)
Jhalawar																				
Khanpur	58	— (—)	20 (35)	— (—)	— (—)	3 (5)	— (—)	14 (25)	0·4 (1)	— (—)	8 (14)	— (—)	2 (3)	1 (1)	1 (2)	3 (4)	— (—)	— (—)	1 (1)	5 (9)
Jhalawar Patam	59	0·4 (1)	25 (42)	— (—)	0·1 (0·2)	7 (12)	— (—)	8 (13)	1 (1)	— (—)	3 (5)	0·2 (0·3)	3 (6)	0·4 (1)	3 (6)	2 (4)	1 (1)	— (—)	0·4 (1)	4 (7)
Aklera	63	0·1 (0·2)	26 (40)	— (—)	— (—)	11 (17)	— (—)	10 (15)	0·4 (1)	— (—)	4 (7)	1 (1)	1 (2)	0·2 (0·3)	3 (5)	4 (6)	0·1 (0·2)	— (—)	0·2 (0·3)	3·6 (5)
Pirawa	68	0·4 (1)	28 (40)	— (—)	0·4 (1)	6 (9)	— (—)	5 (8)	0·4 (1)	— (—)	3 (4)	0·2 (0·4)	4 (6)	0·4 (1)	5 (7)	1 (2)	14 (10)	— (—)	0·4 (1)	3 (5)
Gangadhar	39	0·1 (0·2)	18 (46)	— (—)	3 (8)	4 (9)	— (—)	2 (5)	0·2 (1)	— (—)	1 (2)	1 (2)	1 (2)	0·2 (0·4)	0·4 (1)	0·4 (1)	7 (19)	— (—)	0·1 (0·3)	1·3 (3)
Sawaimadhopur																				
Sawaimadhopur	87	— (—)	25 (29)	— (—)	9 (10)	1 (1)	— (—)	13 (15)	4 (4)	— (—)	8 (21)	— (—)	6 (7)	1 (1)	0·4 (1)	7 (8)	— (—)	— (—)	2 (2)	1 (1)
Banswara																				
Ghatol	50	4 (8)	2 (5)	— (—)	— (—)	18 (36)	— (—)	4 (9)	1 (2)	4 (7)	7 (14)	1 (2)	1 (3)	1 (1)	1 (2)	2 (5)	2 (4)	— (—)	0·1 (0·3)	1·5 (2)
Banswara	53	3 (6)	4 (8)	— (—)	— (—)	18 (34)	— (—)	4 (8)	0·1 (0·3)	5 (10)	3 (6)	1 (2)	1 (2)	— (—)	1 (2)	2 (3)	9 (17)	— (—)	0·1 (0·1)	1·4 (2)
Kushalgarh	54	7 (13)	5 (9)	— (—)	— (—)	13 (24)	— (—)	3 (5)	0·3 (1)	6 (11)	7 (13)	1 (2)	1 (2)	— (—)	2 (4)	3 (5)	6 (11)	— (—)	— (—)	— (—)
Rainfall Zone—XI						..				..			..			*Rainfall Pattern—$E_4(A_2B_1E_2)E_4$*				
Sirohi																				
Abu-Road	15	0·4 (3)	0·4 (3)	— (—)	2 (15)	5 (31)	— (—)	1 (9)	0·2 (1)	2 (14)	0·1 (1)	0·1 (1)	0·3 (2)	— (—)	— (—)	2 (10)	0·1 (1)	— (—)	1 (8)	0·1 (1)

733Agri/76—2000—9-3-77—GIPF.

ERRATA

Rainfall and Cropping Patterns

Volume XIII

Rajasthan

Page No.	Paragraph/Table/ Appendix No.	Line	As printed	As desired
(1)	(2)	(3)	(4)	(5)
4	2·13	2	gven	given
5	3·4	5	6 persons	4 persons
5	3·4	12	100—150	80—100
6	Table 5, Col. 1	4	Nagpur	Nagaur
6	Do.	Col. 2 against Chittaurgarh	91	87
6	Do.	Col. 2 against Alwar	181	166
6	3·5	4	15 to 20	9 to 18
7	Table 6	Col. 1, row 4	Nagpur	Nagaur
7	Table 6	Col. 8 against Bikaner	85·9	59·9
7	Table 6	Col. 8 against Jodhpur	0·1	1·0
8	3·9	7	60 and to 80	60 to 80
8	3·9	10	100 west	100 in west
9	3·11	4	200 cm	over 200 cm
9	Table 10	Heading	Normals	Normal
10	4·5	5	6	4
10	4·5	7	2·17	217
11	4·13	2	16052	16053
11	4·20	Col. 1, row 1 of table	B	B_1
12	4·20	Col. 2, row 10 of table	Swai Madhopur	Srimadhopur
12	4·20	Col. 1, line 5	$G_3F_4B_4/W_4/C_4$	$G_3F_4B_4Pu_4$
12	4·23	5	varies	generally varies
12	4·27	4	2·3 per cent	2-3 per cent
12	4·29	last	$G_4S_4Cm_4Cf_4Bf_4/Cy$	$G_4S_4Cm_4Cf_4Bf_4/Cy_4$
13	4·33	3	in Jaipur	in several taluks of Jaipur
13	4·36	1	bajra	bajra, jowar (kharif)
13	Table 11	Footnote	yeild	yield
14	4·38	Col. 1 against Baswa	"Blank"	$B_4W_4G_4O_4/Ba_4/Pu_4$
14	Table 12	Footnote	yeild	yield
15	4·46	Col. 1, line 2 of table	$M_4Mt_5W_5$	$M_2Mt_5W_5$
15	4·47	4	500-1000	775-950
15	4·52	3	seven of the ten	six of the nine
15	4·53 (under Number of Taluks)	Col. 2, line 1	9	10
		Col. 2, line 2	1	2
15	Do.	Col. 5, line 2	5	6
15	Do.	Col. 5, line 5	1	2
16	4·55	Col. 1, line 4 of table	$G_3S_4Cy_4Cn_4$	$G_3S_4Cy_4Cm_4$
16	Do.	Col. 1, line 5 of table	$S_4G_4Cn_4Cf_4/Cy_4$	$S_4G_4Cm_4Cf_4/Cy_4$
16	4·57	1	22,700	22,730
16	4·59	4	25 and 40	25 and 45
16	4·62	6	(6 to 10 per	(6 to 12 per
17	4·64	Col. 1, line 4 of table	$G_4Cn_4Cf_4Cy_4$	$G_4Cm_4Cf_4Cy_4$
17	4·68	2	800	785
17	4·68	6	300	600
17	4·69		Chittorgarh district	Chittaurgarh and Udaipur districts
18	4·74		3	6
18	Do.	7-8	male cattle	female buffaloes
18	4·74	Pattern/taluk/District—last two lines	G_3 Cm_4 Cf_4 Cy_4 Lasadia Udaipur Bagidora Banswara	"delete"

(1)	(2)	(3)	(4)	(5)
19	4·74	Col. 1 against Karauli		G_3 Cm_4 Cf_4 Cy_4
19	4·74 (Taluks)	Col. 2/3, line 2	Sapotra Do	"delete"
19	Do.	Col. 2/3, line 3	Khandar Do	
19	Do.	Col. 2/3, line 5 to 12	Bundi Bundi	
19	Do.		Bhadeshar Do	
19	Do.	Col. 2/3, line 14	Nainwar Bundi	
19	Do.	Col. 2/3, line 25	Salumbar Udaipur	
19	Do.	Col. 2/3, line 26	Vallabhnagar Dungarpur	
19	4·74	Cols. 2-3	Aspur Do	Aspur Dungarpur
19	4·76	1	4300	4295
19	4·76	3	1469	1488
20	4·85	1	14500	14546
20	4·87	4	40 to 60	30 to 60
20	4·90	Number of taluk/1	9	10
20	4·90	Number of taluk/2	2	1
20	4·93	Number of taluk/3	900	898
21	5·1	9	wented	wanted
21	5·4	6	infrestructure	infrastructure
21	5·8	14	trevels	travels
39	Appendix 2	Rainfall Zone VI, Rainfall Pattern	E_4 (1) $B_1C_1E_2E_4$	E_4 $(B_1C_1E_2)E_4$
45	Appendix 3	Against Pokaran—Col. 3	9049	9047
45	Do.	Col. 1, line 8	$C_3F_4B_4/W_4/C_4$	$G_3F_4B_4/W_4C_4$
46	Do.	Rainfall Zone III, Cropping Pattern—last line	$G_3F_4B_4/W_4/O_4$	$G_3F_4B_4Pu_4$
47	Do.	Rainfall Zone IV, Col. 1, line 11	B_4 Ba_4 W_4 Pu_4/C_4	B_4 Ba_4 W_4 Pu_4/G_4
47	Do.	Rainfall Zone V, col. 1, line 1	B_3 C_4 W_4/Ba_4	B_3 G_4 W_4/Ba_4
48	Do.	Rainfall Zone V, col. 1, line 3	$C_4/O_4/Gn_4$	$G_4/O_4/Gn_4$
48	Do.	Rainfall Zone V—Pattern for Baswa	"Blank"	$B_4W_4G_4O_4/Ba_4/Pu_4$
48	Do.	Rainfall Zone V—Pattern for Nadauti	$W_4Jk_4C_4B_4$	$W_4Jk_4G_4B_4$
48	Do.	Rainfall Zone VI, col. 1, line 12	$P_4F_4Ba_4Pur_4M_4$	$O_4F_4Ba_4Pu_4M_4$
49	Do.	Rainfall Zone VII, Col. 1, line 11	C_4/Pur_4	C_4/Pu_4
50	Do.	Rainfall Zone VIII, Col. 2, line 5	Vallabhpur	Vallabhnagar
50	Do.	Rainfall Zone VIII, Col. 1, line 5	$B_4W_4G_4D_4/Ba_4$	$B_4W_4G_4O_4/Ba_4$
50	Do.	Rainfall Zone IX, Col. 1, line 1	$Jk_3W_4C_4/M_4/C_4$	$Jk_3W_4G_4/M_4/C_4$
51	Do.	Col. 1 against Khanpur	905	945
57	Appendix 4	Rainfall Zone V, Rainfall Pattern	E_4 $(C_3D_1)E$	E_4 $(C_3D_1)E_4$

733Deptt. of Agri/77—12-12-77—2,000 GIPF.